CANADIAN ASSOCIATION OF UNIVERSITY TEACHERS
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CAUT ACPU bulletin

R & D key to future Canadian growth

by John Kucharczyk

One of the more popular objectives of both the scientific community and official and political Ottawa these days is to bring their respective priorities to bear on the economy in the form of an 'industrial strategy'. Accordingly, once the title "University Research and the National R & D Programme" was chosen by the Canadian Federation of Biological Societies for their symposium in Saskatoon last December, a discussion of effective partnership between all sectors of Canadian society in a new and coherent industrial strategy became inevitable.

The nature and dimension of the symposium was fortuitously decided last June 1, when the then Minister of State for Science and Technology, Judd Buchanan, announced a series of measures intended to strengthen R & D in Canada and thereby stimulate the economy. A new and important target of increasing total spending on R & D from 1% of the Gross Domestic Product (GDP) to 1.5% by 1983 was the major element of the Minister's announcement, the other highlight being that a series of mechanisms would be deployed to promote greater cooperation between government and industry and between industry and the universities, with an emphasis on transferring ideas, innovations, skills and manpower.

Soon thereafter, as if to emphasize its conviction that R & D is truly national in scope and concern, the federal government summarily decreed that the 1.5% of GDP level would have to be attained mostly through increased investment by the private sector. A rapid striptease of $2.5 billion from the federal payroll, including $128 million in support of science and technology followed, and Ottawa revealed that provincial governments would now be obliged to bear a larger share of the load.

Despite these political winds of unusual force and direction slashing at research across the country, the symposium participants were for the most part at least mildly optimistic. Find your strengths, build on your strengths, and prosperity can be yours. This argument, so cogently made by Pierre Elliot Trudeau at the beginning of his reign, was put forward time and time again in Saskatoon by speakers gathered from the ranks of industry, universities, the granting councils, and provincial and federal governments.

Research and development, they said, is a key to future Canadian growth. Carefully balanced in basic and applied fields between the three research sectors, properly managed by its most capable practitioners but also by scientific support, it has the capacity for explosive growth and job-provision.

There was, to be sure, considerable difference of opinion on which strategies to follow. Ottawa's plan to entrust private enterprise with the responsibility for stimulating R & D is a long-shot gamble that presently is showing few if any signs of working, some of the speakers concluded. Applause accorded by eminent businessmen to tax incentives tabled in the last two federal budgets has not been accompanied by announcements of large scale expansion of their firms' activities. (Statistics Canada has projected an 8.4% increase in industrial R & D for this year whereas an ad hoc committee formed at the request of Judd Buchanan has concluded that to reach 1.5% of G.D.P. by 1983, the private sector must expand at an annual rate of 27%, government R & D at 10%, and university R & D at 30%).

"The practical reality", said Dr. Riedel, Dean of Pharmaceutical Sciences at the University of British Columbia, "is that money is badly needed, but not only money — there is a need for an atmosphere geared to the maturation of an industry based on research and development which can work in a co-operative or collaborative fashion with university based researchers".

There is no quick and easy prescription to create a climate which would encourage bright young scholars to choose science as a career, to attract more people to creative research which has commercial potential, and to stimulate private sector investment and expansion, the conference participants agreed. But from among those present who routinely perform miracles in the catacombs of the university research laboratory with declining resources, there came a few signicant clues.

Alberta scientist Dr. Ray Lemieux, who against formidable odds created a small but world-class pharmaceutical company, told the meeting that "it is individuals that will come up with opportunities for innovations — not organizations".

"The key to an offensive strategy", he said further, "is the promotion of carefully selected highly developed and creative individuals... and to build effective corporate teams around such individuals".

Other speakers agreed that new high-technology industries would most likely develop through the initiatives of individual entrepreneurs rather than expansion of multinationals in Canada. As a first step towards increased interaction between universities and industry, it would be advisable to create professorships and fellowships to allow for long-term exchanges of scientists normally based in the other sector. The second step might be to convene a forum or task force where representatives of the three research sectors would discuss the management of expanding collaborative R & D activities. Whatever specific approaches are used, there was a general consensus that the prerequisite is a solid research base and excellent training programmes for young research investigators.

Dr. Tom Clark, Director of the Office of Research Administration at the University of Toronto, reported that a workable interface already exists between industry and universities in several communities but needs more encouragement for future development. Some universities, including Toronto, Western and Waterloo, have created special offices that function as "campus companies" in assisting with the commercialization of university-born inventors. What was needed now, it was pointed out, was for the federal government to encourage and support financially this already existing move towards de-Balkanization of our nation's R & D enterprise.

Even under the most favourable conditions, however, real integration would be slow in coming, since the three sectors have managed over the last twenty years to build up more barriers to the free movement of scientists, scientific goods and scientific ideas than could ever be thought possible in a single country with ten provinces.

What was said

Gerald Veilleux, general director of federal-provincial relations in the federal Department of Finance.

"Governments are talking to one another more and more, yet some might think that the more they talk to one another the less they seem to hear one another."

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Adell named investigator at Acadia

The Board of Governors and the Faculty Association at Acadia University have agreed to name Professor Bernard Adell, the Dean of the Faculty of Law at Queen's University, as an investigator with binding remedial powers to deal with the case of Professor Robert McCarthy of the School of Music.

This protracted case originated in 1973 when the university attempted to non-renew the contract of Professor McCarthy. He was, however, restored to his post following a report by an independent committee composed of Prof. André Morel of the Faculty of Law at Montreal, Murray Fraser then of the Faculty of Law at Dalhousie and Robert Turner of the Faculty of Music at Manitoba. The university then carried out a non-renewal the following year despite the report of an investigating committee of the faculty association from outside the university which concluded that the reasons offered were "neither substantial nor substantiated by specific evidence". This committee was chaired by Prof. R. Hanrahan, then of the Department of Commerce at Dalhousie. Professor McCarthy's contract was terminated in 1975.

Since then the CAUT has continued

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CAUT Bulletin

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LETTERS LETTRES

Thinking too small

It was good to read "Research and Development in Canada, a brief outlook", by Judd Buchanan in the Sept. 78 issue (vol. 25 no. 10), and the criticisms offered by the editor on the same page.

While I believe Mr. Buchanan to be sincere, I also believe that the seven point programme outlined will not play a significant role in helping Canada to regain its economic position in the industrialised world, nor will it produce technological excellence, except perhaps in an isolated instance here or there.

The basic reason is that the thinking behind this scheme is altogether too small, and more important, it is not coupled to a policy of development of a Canadian-controlled industry which does its own R and D. The contrast with the situation in the three countries cited by the editor, the United States, Germany, and Japan, is that none of these countries are likely to give up their major industries to foreign control, and in all of them a buoyant R and D future is assured by the industrial situation per se.

I have been very closely associated with industrial research and development at one point in my career and can assure you that it works very well next door to the factory floor where the end-product of development is finally produced. If, for example, the products which are produced by Canada's main dollar-turnover industries were all developed in on-site laboratories, the surge in R and D would be enormous, regardless of government laissez-faire policy. We all know the sad reasons why this is not so.

The fallacy in Mr. Buchanan's programme can be illustrated directly from his own article, taking item 7 as an example: "To increase funding for university research in areas of national concern". The main national concern should be to get more independence for Canadian Industry and the main contribution which universities can make to this end is through political science. Many books with titles like *Canada's Last Chance* have appeared on the market this last decade: this research has already been done.

Continuing on to item I in Mr. Buchanan's 3rd column, we see that the National Research Council will establish something at St. John's Newfoundland for research on icebreakers. But applied research of this sort has for very many years been within the sphere of N.R.C.'s activities. The government has several applied branches within N.R.C. which have been starved of funds these many years, as have the pure science branches. Does Mr. Buchanan really think that adding another inadequately funded branch to N.R.C. will improve Canada's R and D capabilities ? Or is this new facility to be well-funded ? There is of course nothing wrong with doing research on icebreakers, and icebreakers are machines in an area of national concern. But I would like to point out to Mr. Buchanan and his colleagues that very few of my fellow Canadians are going to buy his improved icebreakers. The idea is important and should go ahead but it is too small to make a significant impact. The research will undoubtedly employ talented people usefully, but the commercial benefits after amortising the R & D will be slight.

The new beginning which needs to be made is not in the research labs, but in the restructuring of the control of industry.

Yours sincerely.
Derek Paul
Professor of Physics
University of Toronto

Support sought

The following letter is addressed to all CAUT members:

During February 1978 more than 1400 University of Toronto academic staff authorized a message to the Prime Minister of Canada. This message asked for effective action to help persuade the Soviet authorities to allow emigration for all who had committed no crime but faced intolerable oppression. Many persons outside the University of Toronto expressed approval of this effort; resolutions of support were passed by the Ontario Legislature and Metropolitan Toronto Council.

This message has surely influenced the attitude of the Canadian Government.

On June 5, 1978 I wrote to the Prime Minister asking that he make a direct request to the President of the USSR for emigration for A. Shcharansky and to the President of Uruguay for emigration for Professor José Luis Massera. Both Shcharansky and Massera are mathematicians, both have been adopted by Amnesty International and their cases have become important at an international level. Canada has already offered asylum to Shcharansky and France has offered a professorship at University of Paris to Massera.

The Prime Minister sent a sympathetic reply but he did not say he would take the action requested.

Of course the Prime Minister ought not to be asked lightly to intervene. But the present situation is so grim and these two cases are of such importance that it would be appropriate for the Prime Minister to take this action of moral leadership if he had the backing of the Canadian people.

Therefore I would ask you, if you approve, to write to the Prime Minister, to express support for "the request made on behalf of Shcharansky and Massera in the June 5, 1978 letter from Toronto mathematician Israel Halperin". I would appreciate it if you sent me a copy of your letter.

Letters supporting this request have already been sent to the Prime Minister by hundreds of Canadian mathematicians including the President of the Canadian Mathmatical Society, by U. of T. University Professor Louis Siminovitch and 140 U of T medical faculty, by H.S.M. Coxeter, F.R.S., Harry Welsh F.R.S., Senator Eugene Forsey and several members of Parliament, Pierre Berton, Mayor White of York, the Executive Committee of the Alpha Omega (Dental) Fraternity, the Executive Committee of Amnesty International (Canada), and others.

Yours sincerely,
Israel Halperin.

Editor's note: CAUT wrote to Leonid Brezhnev in the fall of '78 protesting the Soviet Union's persistent violations of the Helsinki accord, and particularily the prosecution of Shcharansky, Ginzburg and others.

Voice of indignation

I am appalled at the intellectual dishonesty of a publication which in one issue (October 1978) will publish one article praising the educational system in one country ("Jewel in the crown of the Cuban revolution"), noting but otherwise ignoring its total lack of academic freedom and in another article condemning the education system of another country ("South Africa's Isolated Universities") because of weakness in its academic freedom. To judge just from the information provided in the articles themselves, in the former (Cuba) there is a complete lack of intellectual freedom and other freedoms both among staff and students, while in the latter (South Africa) many of the staff and students support a movement banned by the government.

It was my belief that the CAUT was an organization dedicated to the defense and preservation of intellectual and academic freedom both in Canada and in other countries. If this were truly your dedication how could you have published such an article on Cuba. Where is your voice of indignation crying out against an educational system in which the "Students' choice of subjects is strictly guided in accordance with national priorities" and in addition they must demonstrate that "they have "correct" political and social beliefs."

Yours truly,
George B. Frank, Ph.D.
Professor
Faculty of Medicine
University of Alberta

One significant error, one startling statistic

I note the remarkably anti-intellectual and thinly-veiled hysteria with which you have responded to the rising tide of parental insistence on responsible book selection policies in the public schools. *("Obscenity"*, October 1978).

Although liberal writer Paul Stuewe's article ("Better Dead than Read?") in *Books in Canada*, October, 1978, "found reasonable arguments for certain forms of censorship", the narrow-mindedness of your permissive editorial policy denied a hearing in your publication for the thoughtful and civilized position of the pro-parent movement in regards to book selection policies in the public schools.

Inasmuch as you have adopted such an ostrich-like posture, preferring not to be confused by a liberal discussion of the topic, I will not attempt to intrude into your reactionary ghetto, except to correct one significant error and leave you to ponder one startling statistic.

The error is the identification of Renaissance International as "an American organization working to remove certain books deemed by the members to be obscene, from Canadian high schools and libraries."

Renaissance International is a registered Canadian charity, which began in the Halton region of Ontario in February, 1974, in response to the arrogant intrusion into the sanctity of the home by the alien culture of secular permissiveness dominating the public schools.

The "startling statistic" to which I refer is the 62% of the public which

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Bill C-21 could impair arts, literature in Canada

by Helen Baxter

The artistic, literary and cultural life in Canada could be seriously impaired if proposed federal obscenity legislation is passed, says the Canadian Association of University Teachers.

In a brief submitted to the House of Commons Standing Committee on Justice and Legal Affairs, the CAUT has recommended that Bill C-21, the omnibus bill containing amendments to sections of the Criminal Code dealing with obscenity, not be passed in its present form.

Bill C-21, formerly Bill C-51, was reintroduced in the House of Commons last fall.

The bill would change the legal definition of obscenity to include as separate offences the undue exploitation of sex and/or violence, crime, horror, or the undue degradation of the human person.

Bill C-21 would also provide legal sanctions for a type of local option in handling obscenity cases by increasing the penalties involved and thereby allowing the attorneys-general to override the right to elect trial by judge alone. The penalties for breaking the law on obscenity proposed under the bill include ten years imprisonment or a fine of up to $100,000, or both.

In its brief, the CAUT strongly objected to any change in the present definition of obscenity which combines the undue exploitation of sex with violence, crime and horror. The Association pointed out that the definition proposed under Bill C-21 would place in jeopardy "a great deal of literature from the ancient Greeks onward" and would also "have a chilling effect on booksellers and publishers in Canada". Similar problems would arise for paintings, sculpture and works of art generally, said the CAUT.

In addition, the Association said, the proposed wording of the legislation could inhibit investigative reporting and would pose a particular threat to television programs exposing the existence of degrading situations in the attempt to provoke change.

The CAUT recommended that the definition of obscenity remain unchanged but that legislation be adopted so that nuisance laws could be put in force to prevent the public display of sexually explicit materials and the restriction of their sale to adult shops.

The Association also strongly opposed any legislation promoting a system of legal local option and particularly opposed the imposition of extreme penalties in terms of fines or jail sentences "because some small locality in the country objected to the circulation of certain books or works of art".

The CAUT recommended that legislation dealing with obscenity refrain from "Draconian penalties" unrelated to the system of penalties in other parts of the Criminal Code and that defendants continue to have the right to elect trial by a judge and jury or by a judge alone.

The CAUT agreed with the principles involved in sections of Bill C-21 concerning the procuring of children to commit sexual acts for the purposes of photographic reproduction and sale. The Association stated that it should be a criminal offence to undertake such procuring. It also said that the sale of sexually explicit materials should be forbidden to minors and this should be part of the nuisance regulations.

However, the CAUT objected to sections in the bill which would ban child pornography as a distinct category from obscenity in general and would define a child as someone who is or appears to be sixteen or under, because of extreme vagueness of the language involved.

The Association also recommended the inclusion of a section in the legislation restricting the right to lay obscenity charges to the provincial attorneys-general only, in order to restrict the tendency for citizens' "vigilante squads" to try to tell other citizens what they may read or see.

"The attorney-general can then answer to the legislature for his use of the taxpayers' money to attack Shakespeare or Margaret Laurence," said the CAUT.

The complete text of CAUT's brief on obscenity and pornography appears on page 19.

Obscenity from A to Z

The Texas State School Book Commission continues its untiring crusade against dirty books. After banning *Catcher in the Rye, Of Mice and Men* and *The Diary of Anne Frank* from the state's school libraries, it has tackled the true root of the problem — standard dictionaries.

These seemingly innocent tomes, says the commission are the repositories of words like "bed", which, when used as a verb, refers to the act of sexual intercourse. Without the commission's protection, any pupil seeking the meaning of "beckon" or "bedbug" might stumble onto this goldmine of erotica with disastrous results. Hair growing on the palms. Dark circles under the eyes. Literacy.

But surely the commission has missed an even darker threat. The English alphabet contains letters which, through a lack of vigilance on the part of the authorities, have infiltrated words of unprecedented vulgarity. The vowels alone have enough on their conscience (remember *The Story of O?)* to make the entire alphabet guilty by association.

To do a thorough job, the Texas body must strike at the heart of the printed word. And education take the hind-most.

Reprinted from the Globe and Mail

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THE UNIVERSITY OF CALGARY

Letters

identifies with the Renaissance position regarding book selection policies in the public schools. This was demonstrated in the every householder opinion survey conducted here in Halton region (Ontario) in 1974, and recently reconfirmed in the telephone poll taken in connection with the Ontario Educational TV debate I held with Charles Templeton on this subject.

Perhaps when your editorial policy permits a hearing for views differing from your little vision of the universe, your readers might be permitted exposure to such heterical thinking.

Meantime, thank you for the space to make the above-noted corrections.

Sincerely,
Ken Campbell
President
Renaissance International

"Cheap Shots"

In the October 1978 edition of the *CAUT Bulletin,* I discovered to my chagrin Arthur P. Monahan's review of John S. Brubacher's latest book — actually a slight volume — *On The Philosophy of Higher Education* (Jossey-Bass, 1977). After reading Professor Monahan's review, I wasn't certain whether the heading ("Lofty Sounding But Largely Empty") described the quality of the review or that of the book itself !

I made this cute (humorous ?) remark to give our readers a sample of the series of "cheap shots" that Professor Monahan took blithely at an effort that deserves a far better fate from someone who is living through this transitional time in the life of the North American university. May I suggest to our readers that Professor Monahan's treatment of this helpful little volume is readable and witty (humor of the above type), but that he might be well advised to read it again — and perhaps more carefully this time.

On second thought, I withdraw my plea that he read the book again. I'm afraid that what we have here may well be a case of someone with a particular philosophical orientation being critical of another person who is doing his level best as a distinguished educational philosopher to present a balanced outlook before assuming a philosophical pragmatic position. One can't help but wonder (1) whether Professor Monahan volunteered this review to the *Bulletin,* (2) whether the Editor asked him to review the book knowing that he was asking a Catholic philosopher to review a book written by one of this century's leading educational philosophers with a pragmatic persuasion, (3) or whether he was selected as a reviewer just by chance. Whatever the case may be, may I recommend that more of an "op-ed" approach be taken in the future so that the unsuspecting reader won't be dissuaded from reading what could be a truly worthwhile book. I suggest that this is just such a volume.

Very sincerely yours,
Earle F. Zeigler,
Professor,
Faculty of Physical Education
The University of Western Ontario
London, Ontario

Prof. Monahan replies...

Two things strike me about Professor Ziegler's negative reaction to my review of Brubacher's *On the philosophy of higher education* CAUT Bulletin, *October, 1978): 1)* Zeigler clearly has a much higher estimate of the book's value than I do; 2) he is troubled by the notion (fact? possibility?) that my judgment reflects the "particular philosophical orientation... (of) a Catholic philosopher."

I do not deny Professor Ziegler the right to a judgment different from mine, on any subject; I would have been better instructed by his positive judgment on the Brubacher volume, however, had he provided some reason for it other than a reference to Brubacher's reputation. But I do object to Ziegler's application of the "and so's your old man" type of argument to his assumptions about my religious and philosophical attitudes. I do not accept the implication that I, or any other professional academic, might be incapable of meting out due praise to an author with whose philosophical views I do not necessarily agree.

Warns of assault

The following letter is reprinted from The Globe and Mail

William French is to be commended for exposing the grave threat to free speech and artistic expression represented by Hamilton's proposed bylaw. Hamilton's initiative may be an extreme example but it is only one in a chain of recent incidents, encompassing all levels of government, federal as well as provincial, that collectively amount to a renewed assault on fundamental democratic freedom in Canada.

A random list would include Last Tango in Paris in Nova Scotia, Pretty Baby and In Praise of Older Women in Ontario, Les Fees ont Soif (the book version) in Montreal, and, not least, the proposed amendments to the Criminal Code to expand substantially the meaning of obscenity and other forms of objectionable content.

We should have no illusions about the thrust of these attacks. They are not confined to so-called obscene publications (assuming anyone can satisfactorily define obscenity); they are directed against all forms of controversial artistic expression and indeed, in the case of Montreal's bylaw regulating public assemblies, against other facets of free speech as well. Those who espouse these new and old forms of censorship make no bones about wishing to impose their perception of societal values on the rest of us. However lofty their motives, their actions show little understanding and less concern for the impact of the legislation on freedom of expression and its philosophical foundations. If the dike is breached here no other fundamental freedoms will be safe.

One might suppose that the law would provide a bulwark against this regression to a literary dark age, but unfortunately it is not so. Ontario has no Declaration of Fundamental Rights, only a Human Rights Act, and the act is only concerned with various forms of discrimination. Astonishing as it may seem, even our most basic civil liberties depend on the goodwill, and the good sense, of Queen's Park. Equally surprising, no Cabinet minister has constitutional responsibility for protecting those that we have inherited from England by convention. There is a federal Declaration of Human Rights, but so far it has been construed very restrictively by the courts. A sharply divided Supreme Court of Canada has eroded them still farther by its rulings that provincial film censorship laws and bylaws regulating public assemblies are within the provincial competence.

We should have no illusions about the difficulty of restoring some sanity to this corner of the political spectrum, but if civil libertarians of all shades do not rally now to the cause it may be too late.

Jacob S. Ziegel
Professor of Law
University of Toronto

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University enrollment down

There are 1.4 per cent fewer full-time students at Canadian universities this year than last, according to Statistics Canada.

The number of part-time students also has declined.

Full-time undergraduate enrollment decreased in all provinces except Quebec, where enrollment rose from 69,756 students last year to 71,973 this year.

Full-time enrollment in Ontario dropped 2.7 per cent, from 140,000 to 136,244. In the four Atlantic provinces, enrollment fell from 35,107 to 34,015; in the four western provinces, from 85,446 to 84,173.

The number of part-time undergraduate students declined by 1.2 per cent, from 179,412 to 177,292.

There were fewer graduate students in all provinces except Nova Scotia, where there was a small increase.

This year's total graduate enrollment is 35,267 down from 36,551. Part-time graduate enrollment also declined from 28,631 in 1977-78 to 28,244 for 1978-79.

Enrollment by province

Following is a province-by-province summary of full-time enrollment:

Undergraduate	*1978-79*	*1977-78*
Newfoundland	5,866	6,291
Prince Edward Island	1,402	1,542
Nova Scotia	16,391	16,691
New Brunswick	10,356	10,583
Quebec	71,973	69,756
Ontario	136,244	140,000
Manitoba	15,327	15,905
Saskatchewan	13,429	13,540
Alberta	28,213	28,611
British Columbia	27,204	27,390
Total	326,405	330,309
Graduate	*1978-79*	*1977-78*
Newfoundland	394	473
Prince Edward Island	0	0
Nova Scotia	1,323	1,306
New Brunswick	448	497
Quebec	9,736	9,879
Ontario	15,298	15,729
Manitoba	1,231	1,570
Saskatchewan	680	814
Alberta	2,941	3,035
British Columbia	3,216	3,248
Total	35,267	36,551

Government plans cuts in library resources

The Canadian Association of University Teachers has urged the federal government to reconsider its plans to restrict the free distribution of government publications to Canadian libraries.

In a recent letter to the Minister of Supply and Services, Pierre de Bané, the CAUT expressed alarm at the government's proposal to reduce by half, effective April 1, the number of Canadian libraries now receiving government publications free of charge.

At present there are approximately 580 full and selective depository public, university and college libraries in Canada. Due to sizable cuts in the budget of the Publishing Centre, Supply and Services, the federal government plans to reduce that number to 302.

The effect of the proposed cut on university and college libraries would be particularly severe, resulting in a reduction from 28 to 3 for full depository status, and a reduction from 189 to 125 for selective status.

In its letter, the CAUT stated that the cut will result in a critical reduction in access to information about federal government activities, programmes and research. In many instances, government publications are unique sources of information, said the CAUT.

The CAUT pointed out that the proposed reduction runs counter to the government's policy of providing Canadians with information about their government and country as laid out in the Green Paper on Legislation on Public Access to Government Documents.

The Association stated that the proposed cuts will also place an additional and onerous financial burden on libraries which are already subject to severe budget restraint.

The CAUT urged the government not to overlook the implications for national unity of making collections of federal material available in all parts of Canada.

In addition the CAUT has made this material available to faculty associations and individual librarian members across the country urging them to write to their M.P. and to the Minister to protest. A very large number have done so.

"A government which produces more and more paper at ever higher standards of glossiness and then refuses to give it to anybody seems to have found the perfect bureaucratic solution", said the Executive Secretary of CAUT, Donald C. Savage. **H.B.**

Morris Berkowitz

Morris Berkowitz, CAUT Board member and sociology professor at Brock University, died in late December after a brief illness.

Professor Berkowitz was born in New York in 1931 and was educated at Purdue University in Lafayette, Indiana and Yale University, New Haven, Connecticut.

He held teaching positions at Purdue, Yale and the University of Pittsburgh. He also taught at the Chinese University of Hong Kong and was Visiting Fellow at the Institute of Southeast Asian Studies in Singapore. He was a member of the Sociology Department at Brock University at the time of his death.

Professor Berkowitz was responsible for numerous publications in the field of sociology, with a particular emphasis on East Asian Studies.

From 1970 on, he was active in community services in the Niagara Peninsula.

He was a member at large of OCUFA from 1976 to the present and became a CAUT Board member in May 1978.

Professor Berkowitz leaves behind his wife, Janice, and two children.

Adell ..... from p. 1

to press the case, and the faculty association attempted to resolve it at the bargaining-table as part of the negotiations of its first collective agreement. This attempt failed.

When it was announced in 1978 that Dr. Alan M. Sinclair had been appointed the new President of Acadia, it seemed possible that a resolution could be arranged. Negotiations took place between the new president, the faculty association and the CAUT. At first it seemed as though nothing could be achieved. As a consequence the Board of Directors of the CAUT passed a resolution in November recommending that the May Council of the CAUT censure the past-president, administration and the board of governors of Acadia. The CBC programme Ombudsman also took an interest in the case and devoted sections of two programmes to it.

As a consequence of subsequent negotiations between the faculty association, CAUT and the board, it was agreed to put the case of Professor McCarthy to an investigator with unlimited binding remedial powers.

The parties agreed to name Professor Bernard Adell to be the investigator in question, and it is expected that he will undertake his work in March.

NOTES FROM WASHINGTON

by Clive Cookson

Do states have the constitutional right to control the flow of federal funds to public colleges and universities and other state agencies?

The U.S. Supreme Court is likely to consider this question some time in 1979; and, according to many Washington-based educational groups, the future well-being of public higher education depends on the answer being a definite no.

The specific case which the Supreme Court has been asked to hear concerns a law passed by the Pennsylvania legislature in 1976, requiring all federal aid and grants to public institutions in Pennsylvania to be "re-appropriated" by the legislature before the money can be spent. Milton Shapp, who was then governor of the state, first tried to veto the bill, and when the legislature overrode his veto he challenged the law's constitutionality in court.

The Pennsylvania supreme court ruled that the state legislature does have the constitutional authority to re-appropriate federal funds, but Governor Shapp (whose term of office has just ended) has appealed to the U.S. Supreme Court. He argues that the legislature is violating two articles of the American constitution: the Supremacy Clause which invalidates state laws whose effect is to nullify programmes authorised by Congress, and the right of Congress to "provide for the general welfare of the United States".

Most of the country's major higher education and civil rights groups — 32 in all — have filed a friend-of-the-court brief urging the Supreme Court to hear the case (Shapp vs. Casey) and overturn the law. Otherwise, they argue, other states will follow Pennsylvania's precedent and pass similar laws in order to keep financial control over state institutions. In recent years Washington has been providing more and more of the money spent by state agencies — 25 per cent in Pennsylvania in 1976.

$80 billion at stake

Ultimately at stake is a total of $80 billion (repeat $80 billion) a year in federal aid to public education and research, health, social and welfare programmes, racial minorities, and so on. America's educational leaders say it is absolutely essential that the federal government should remain free to implement its programmes in the national interest, without interference from state legislators pre-occupied with their own local interests.

"Public higher education will be doomed" if the Pennsylvania law is not quashed, Albert Shanker, President of the American Federation of Teachers, has claimed (with characteristic bluntness). He says that if state colleges and universities have to get the legislators' approval before spending any federal money, they will be hopelessly handicapped in the competition with independent institutions.

State colleges in Pennsylvania have already been damaged by the legislators' re-appropriation procedures. The process took so long in 1976 and 1977 that students started the academic year not knowing whether they would receive the basic federal grants they were entitled to. The uncertainty has been blamed by the colleges for their unexpected fall in enrollment last year, according to Allan Ostar, executive director of the American Association of State Colleges and Universities.

"Colleges in Pennsylvania report a vast multiplication of paperwork and bureaucracy, two separate sets of reporting and accounting procedures, months of delay in getting federal funds released even after the state legislature acts, problems with overhead or indirect cost money, problems with the different federal and state fiscal years, and the loss of funds," Mr Ostar said.

A further difficulty arises if a college wins an unexpected federal grant when the legislature is out of session. The time limit on the grant may not allow the college to wait for the legislators to return — if so, the money is lost.

Beyond the tangible practical effects of the Pennsylvania law lies a fear that it may undermine academic freedom in public higher education by making colleges totally dependent on the state. The legislature not only fixes the institutions basic operating budget but also assumes control over the federal funds which formerly provided some financial independence.

Political intrusion feared

If the Pennsylvania law is imitated elsewhere, "education and research, areas traditionally left to the discretion of universities and federal agencies operating under carefully structured federal review procedures (e.g. outside peer review of research and training grants), may possibly be subject to political intrusion by state legislatures," the 32 organizations said in their Supreme Court brief.

They asked the Carter administration to intervene on their side, arguing that the case is far more than a quarrel between a state governor and his legislature — that it is a major constitutional issue in which the federal government's interest clearly coincides with that of the governor.

The administration tried to lie low. But the nine justices of the Supreme Court would not let them; in what experienced court watchers say is a highly unusual move, the justices have asked the U.S. solicitor-general to file a brief on the case.

At the time of writing the justices had not said they would hear Shapp vs. Casey, but their request to the solicitor-general makes it very probable that they will. If so the most likely time for the hearing is probably next autumn.

By then other parties may have entered the case, escalating it into a test of federal vs. state power, of the sort that is all too familiar to Canadians but occurs only rarely in the United States.

BARGAINING TALK
NÉGOCIONS

by Ted Bartley (CAUT Collective Bargaining Officer)

In a lengthy decision released shortly after Christmas, the New Brunswick Industrial Relations Board has ruled on the matter of the appropriate bargaining unit for the academic staff at the University of New Brunswick. The Association of University of New Brunswick Teachers (AUNBT), the CAUT affiliate, had applied to be certified as bargaining agent for all academic staff at the University. The Law Faculty Association and the Engineering and Forestry Faculty Association, on the other hand, had sought separate bargaining units for their respective members.

After nine days of hearings, and after considering the extensive written arguments of the parties, the Board found the university-wide bargaining unit which had been proposed by the AUNBT to be the most appropriate for faculty collective bargaining at the University. Thus, the applications of the Law Faculty Association and the Engineering and Forestry Faculty Association were dismissed.

The greater part of the decision focuses on the "community of interest" between the lawyers, engineers, and foresters and the rest of the academic staff. While acknowledging that the sub-groups did have unique professional ties and some valid special concerns, the Board goes on to observe:

> "If the Law and Engineering Faculties are appropriate as separate units, can the same not be said for Physical Education, the School of Nursing or Business Administration. Surely the proper functioning of the University enterprise depends on co-operation between faculties (p.31)... The Board must refer to its own experience and industrial relations policy; we must ascertain a viable collective bargaining structure including community of interest. Although each case is usually unique unto itself, we have had the benefit of previous applications in this province and the reasoned findings of other Boards and other Courts. On the basis of the evidence, we find that fragmentation of bargaining units would not be in the best interests of either the faculty members or the university — that a comprehensive bargaining unit will offer strength and substance (even with its internal diversity) and the employer will be relieved from the expense and difficulty of multiple bargaining relationships. The evidence from other jurisdictions has indicated that university-wide units have been able to respond and accommodate special interests... (pp 32, 33)."

The University's preference for a university-wide bargaining unit had been made clear both at the hearing and in written argument, and this undoubtedly had some impact on the Board's decision. At the same time, however, the University objected to the inclusion of instructors, professional librarians and department chairmen in the bargaining unit, and was less successful on this point. These three groups were also included in the bargaining unit, as AUNBT had intended.

The New Brunswick decision, particularly those rulings with respect to fragmentation of bargaining units, department chairmen and professional librarians, conforms with the balance of established precedents for faculty collective bargaining. The next step in the certification process will be a representation vote among the academic staff in the unit approved by the Board. It is expected that this could take place as soon as early January.

The LAURENTIAN University Faculty Association has been moving rapidly toward certification. The sign-up campaign was concluded in about six weeks, the application filed with the Ontario Board and the first day of the hearing held on December 11th. The hearing and Board examinations were scheduled to continue in January... A series of meetings to discuss the certification option were held at MEMORIAL in December. Speakers included John Cowan, who has been instrumental in the negotiations to date at Ottawa, Ken Swan, Chairman of the CAUT Collective Bargaining Committee, and Gary Chaison, Chairman of the AUNBT Collective Bargaining Committee.

Negotiations for a first collective agreement at DALHOUSIE were scheduled to get underway in January... The YORK University Faculty Association, led by chief negotiator Paul Evans, recently signed-off its second collective agreement... Renewal negotiations at Carleton were successfully concluded at CARLETON in November. The collective agreement was extended to April 30th, 1980, and the parties have agreed to submit the unresolved monetary issues in future negotiations to binding arbitration.

A recent arbitration decision at the University of OTTAWA has resulted in the granting of tenure to a member in the faculty of common law. The unanimous decision of the board, which contains some sixty pages of reasons, will be forwarded to Local and Provincial Associations in the next installment of the CAUT ACADEMIC ARBITRATION SERVICE.

Reprinted from Harper's

Greater funding stability for Maple Leaf medicine?

by John Kucharczyk

News Item: Ottawa, December 1, 1978

> "A major step has been taken towards the achievement of greater stability in the federal government's support for biomedical research, according to a statement issued today by the Honourable Monique Bégin, Minister of National Health and Welfare.
>
> "In what amounts almost to a landmark decision, Cabinet has accepted the concept of a formula for establishing the annual expenditure level for MRC for the years 1978 to 1983."

Federal Cabinet approval of a five-year funding plan for the Medical Research Council is a Pyrrhic victory of sorts for Canadian biomedical science. Use of the formula guarantees that medical research will be as well treated as other sectors of the economy and that the MRC, which administers most federally-financed extramural health research, will now be able to plan in an orderly manner rather than scramble in response to the usually inadequate budgets voted by Ottawa year by year.

At the same time, providing that inflation in the scientific sector continues at a rate greater than inflation in the economy-as-a-whole, the budgetary guidelines spelled out in the formula will doom MRC to further losses of purchasing power.

Three factors will determine the size of future MRC budgets, according to a recent press release issued by the Office of the Minister of National Health and Welfare:

— "the appropriate index for cost increases (now, according to government guidelines, the Implicit Price Index)
— plus the percentage of real growth of the Gross National Product
— less one per cent."

Inclusion of the latter two variables in the funding formula reflects Ottawa's current strategy to attack inflation through fiscal restraint — limiting overall government expenditure growth to one percentage point less than the growth of the Gross National Product. The first factor, the Implicit Price Index or as it is more properly termed, the Implicit Price Index of the Gross National Expenditure (IPI-GNE), is intended to compensate for the escalating costs of doing scientific research on a year to year basis.

In principle, the government's decision to use the IPI-GNE as a science deflator is a poor choice for two main reasons:

1. The total research budgets of MRC, NRC and NSERC (approximately $370 million in 1978-79) comprise a very small fraction of the Gross National Expenditure (estimated to be $232,800 million in 1978). Annual price movements for goods and services used in scientific research have therefore only a minor effect on the Implicit Price Index.
2. The great majority of cost movements making up the Implicit Price Index are irrelevant to science activities. The index is derived by calculating annual increases in some 300 items of typical Canadian expenditure grouped under several major aggregations: personal expenditure on consumer goods and services; government current expenditure on goods and services; gross fixed capital formation (including farm and grain in commercial channels, and export of goods and services minus imports of goods and services).

These IPI-GNE categories are for the most part quite unrelated to those used to construct a specialized cost-of-research index, such as NRC's Research Expenditure Index (NRC-RE). The NRC used actual grant expenditure data to determine precisely how much was spent by grantees on salaries and stipends for post-graduate students; salaries and stipends for post-doctoral assistants; salaries for other assistants (research associates, technicians, summer students, etc.); minor equipment (less than $5,000); and materials and supplies; regular equipment (between $5,000 and $75,000); major equipment (between $75,000 and $150,000); travel; computing services; publications; conferences; science promotion; international exchanges, etc. Cost increases for each of these expenditure items during fiscal year 1973-74 were then determined using the appropriate Statistics Canada price index.

The data presented in Table I show that the IPI-GNE has consistently understated the severity of inflation on both NRC and total federal science expenditures (SEPI) since 1970-71, although not quite so much as the Consumer Price Index (CPI). Moreover, the magnitude of the differences in scores of the specialized science indices and the IPI-GNE and CPI has grown progressively larger since 1970, resulting in a growing disadvantage for science with respect to the rest of the economy.

Table II shows the effect on MRC research budgets under conditions of pegging these to various cost indices and formula funding schemes. If the budgetary formula announced by the Minister of National Health and Welfare last December 1 had been in effect for successive years since 1970-71, the MRC research budget would today have been $82 million (Column "E") instead of $63 million (Column "A"). However, had the same formula been applied beginning in 1977-78 (Column "G"), MRC would have received approximately $3 million less in fiscal years 1977-78 and 1978-79 than it actually did.

These calculated and actual dollar comparisons support the more general observation that scientific inflation (Column "C") has since 1970-71 been increasingly greater than inflation in the economy-as-a-whole (Column "B"). It also appears that this difference can no longer be compensated for by introducing into the MRC budgetary guidelines a "growth" factor related to annual increases in the Gross National Product — 1% (compare Columns "A" and "G" for 1977-78 and Columns "A" and "H" for 1978-79).

It is unlikely that the federal Treasury Board would ever agree to employ the NRC-RE or a similarly

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Employment of university graduates

by Randy Mangolt

There have been many reports recently of large scale unemployment and underemployment among university graduates possessing almost any kind of undergraduate or graduate degree. These same reports predict continuing employment problems for university graduates well into the foreseeable future. However, given the current period of general employment difficulties, the employability of university graduates appears relatively good.

Traditionally there has been a negative correlation between the number of years of schooling and unemployment i.e. the higher the level of education, the lower the unemployment rate. The following table illustrates this correlation for the years 1976-1978.

Unemployment Rates in Ontario by Educational Level

	June 1976	June 1977	June 1978	1976-78 Average
Elementary	5.1%	5.9%	6.1%	5.7%
Secondary	6.8%	8.6%	8.3%	7.9%
Some post-secondary	6.4%	5.7%	7.6%	6.6%
Certificate or Diploma	4.7%	3.3%	5.1%	4.4%
University	3.7%	3.7%	4.6%	4.0%
Total	5.9%	6.8%	7.1%	6.6%
Ontario Youths aged 15-24	12.1%	13.3%	13.6%	13.0%

Source: Labour Force Survey Division, Statistics Canada

This table illustrates that university graduates have unemployment rates lower than those with a certificate or diploma and significantly lower than other educational groups. More importantly, although unemployment has risen generally between 1976 and 1978, the proportion of the unemployed in Ontario accounted for by university degree-holders has remained steady between 1976 and 1978.

Among Canadian youths aged 15-24, the following table also illustrates that university graduates experience significantly less unemployment than those in other educational groups.

Unemployment by Education Level, 15-24 Age Group, Canada

April	1974	1975	1976	1977	1974-77 Average
Elementary	18.1%	26.5%	23.9%	25.0%	23.2%
Secondary	10.6%	13.1%	14.0%	16.0%	13.5%
Some post-secondary	8.9%	7.9%	8.3%	12.6%	9.5%
Post-secondary degree	5.7%	4.8%	4.7%	7.3%	5.4%
Post-sec. diploma or certificate	4.4%	6.2%	6.8%	7.9%	6.3%
All educational levels	10.4%	12.3%	12.8%	15.1%	12.7%

Source: Statistics Canada

It is clear that university graduates are still favoured in the job market compared to those in other educational groups and this relative position has not been deteriorating in recent years.

The Ontario Ministry of Colleges and Universities commissioned a study (Survey of 1974 Graduates of the Ontario Post-secondary System) of 24,000 graduates of Ontario universities who graduated between 1 April 1974 and 31 July 1974. The following table compares the percentage of unemployed (but seeking employment) for these university graduates, for close to 11,000 CAAT graduates surveyed at the same time, for Ontario as a whole, and for Canadian youths aged 15-24.

Percent Unemployed but Still Seeking Employment

	Sept. 1974	Dec. 1974	Mar. 1975	June 1975	Sept. 1975	Dec. 1975
University grads	6.1%	4.1%	5.3%	6.7%	4.9%	3.7%
CAAT grads	7.6%	5.7%	5.5%	5.0%	5.3%	5.0%
Ontario	4.1%	4.9%	6.8%	6.0%	5.3%	6.3%
Canadian youths (15-24)	—	—	12.3%	12.3%	12.0%	11.9%

Source: MCU Survey, Statistics Canada

With the exception of June 1975, university grads experienced less unemployment than their CAAT counterparts and, except for Sept. 1974 and June 1975, university graduates had less unemployment than the Ontario labour force as a whole. The unemployment rate among Canadian youths aged 15-24 is at least double the rate for university grads (most of whom are in the 15-24 age group).

A follow-up survey of 1975 graduates of Ontario colleges and universities revealed that bachelor graduates had *employment* rates varying between 88.5% 3 months after graduation and 93.5%, 18 months after. This compares with CAAT grad employment rates of 84.5% 3 months after graduation to 92.7% 18 months after. It must be remembered that the difference between these rates and 100% is *not* the percentage of graduates unemployed but seeking employment. There is a very significant percentage of graduates who are not employed because they are attending graduate school, travelling, or choosing not to work for other reasons. General Arts and Science bachelor grads employment rates varied between 89.2%, 3 months after and 94.6%, 18 months after; Fine Arts, Language & Literature grads had rates varying between 91.5% and 88.8% for the same time periods; Medical and Allied Health Sciences 94.5% to 100%; Engineering 95.1% to 96.2%. The report stated that 1975 university bachelor graduates sustained their 1974 rate of employment although their numbers were 14% greater than the 1974 cohort.

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AMNESTY INTERNATIONAL

by Jean Sonnenfeld

Political imprisonment in the People's Republic of China

A major Amnesty International report published on November 27, 1978, says political dissenters in the People's Republic of China can be detained, interrogated, tried and punished without access to fair trials and without safeguards against maltreatment during detention.

The 176-page report, *Political Imprisonment in the People's Republic of China,* which is the result of several years of intensive research, outlines the country's constitutional, legal and penal systems. It draws on cases of prisoners of conscience in China under adoption or investigation by AI, some of whom are serving sentences ranging from 15 years to life imprisonment. Among them are Lin Xiling, a girl student arrested in 1957 at the age of 20; Chamba Lobsang, a Tibetan monk arrested in 1959; Deng Qingshan, a young peasant sentenced to 15 year's imprisonment in 1970, and others detained for their beliefs.

AI submitted the draft of its report to the Chinese government in June and offered to publish any comments or corrections. AI has heard nothing from the government. However, lately there have been reports in the international press that Jiang Hua, President of China's Supreme Court, has said there are still many people wrongfully imprisoned in the country, and that "all sorts of excuses" were being used to avoid reviewing miscarriages of justice.

The AI report criticizes legislation in China providing for political imprisonment, and says that such laws are loosely worded and have been interpreted broadly, permitting large scale imprisonment on political grounds. Under the Chinese constitution, certain categories of people defined as "class enemies" can be deprived of their political and civil rights solely on the basis of their "class origin" or political background.

The report points out that the continuous "mass mobilization campaigns" since the early 1950s have been used to identify people dissenting from official policy and have broadened the range of political offences to the extent that each campaign has defined new types of offenders according to the politics of the period.

Under Chinese law, pre-trial detention is unlimited and the trial does not normally begin until the detainee has "confessed" in writing. Political defendants are usually tried *in camera,* or by "mass public trials" where no defence is possible. The report states: "Trials are a mere formality: rather than 'trials' they are, in fact, meetings to announce the sentence."

Certain political offenders can be punished by compulsory labour without even judicial investigation. Formal punishments range from a term of imprisonment to execution. The report cites the case of He Chunshu who was sentenced to death in February 1978 for writing and distributing a "counter-revolutionary" leaflet. According to the court notice, he had "obstinately refused to admit his crime", and was executed immediately after sentencing.

AI emphasized that it was not possible to present a comprehensive portrait of detention conditions prevailing in China at any one time, but AI is aware of constant complaints by prisoners about punishments, insufficient food and inadequate medical care.

AI welcomed the announcement that efforts are being made in the People's Republic of China to redress miscarriages of justice committed in the past. However, the legislation providing for political imprisonment is still in force and arrests on political grounds are continuing.

Political Imprisonment in the People's Republic of China: 176 pages, is available from Amnesty International, 2101 Algonquin Avenue, Ottawa, Ontario K2A 1T1. Price: $4.00

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Bishop's is a small, residential English language university located 90 miles east of Montreal, with a tradition of close relationships between faculty and students. Communication skills and leadership qualities are, therefore essential, as is a commitment to sound scholarship. Since the Dean will be required to work in the French language when dealing with the government and in external committees, first consideration will be given to candidates who are fluent in French.

Inquiries and applications (including the names of three referees) should be directed to:

Miss Catherine Wark, Secretary
Search Committee for the Dean
Bishop's University
Lennoxville, Québec
J1M 1Z7

Simon Fraser University

Kelowna School of
Resource Management

DIRECTOR

Simon Fraser University invites applications for the position of Director of the Kelowna School of Resource Management. The University is planning to introduce this interdisciplinary program in natural resource management in September, 1979. The School, located in Kelowna in the Okanagan Valley, will offer third and fourth year courses towards a Bachelor's degree. The University expects to appoint six faculty this year with additional appointments being made over the next eighteen months to total fifteen full-time faculty. Final program approval and budgetary support from the Universities Council of British Columbia are pending; a final decision is expected before the end of 1978.

The Director will be expected to provide leadership in the development of the School's programs and will be responsible for the administration of the School. Candidates should have considerable University research and teaching experience and demonstrated management abilities and leadership qualities. Previous experience in an interdisciplinary natural resource management program is preferred. The ability to communicate effectively with senior officials of universities, colleges, industry, governments, and the general public is important.

The position falls within the senior academic administration of the University and salary and terms of appointment will be negotiated with this in mind.

The preferred date of appointment is July 1, 1979, but a different starting date could be negotiated. Applicants should send a curriculum vitae and the names of three referees to:

Dr. D. R. Birch,
Acting Vice-President, Academic
Simon Fraser University
Burnaby, B.C. V5A 1S6

The University of Guelph surveyed 2000 of its 1976 graduates eight months after graduation and found that 82% had obtained permanent employment (compare with 84% in 1975 and 90% in 1974). However, only 10% of those seeking employment reported spending most of the time since graduation unemployed. This rate is considerably lower than among these of the same age group with no post-secondary education. A University of Western Ontario survey of 2300 of its 1977 graduates four months after graduation revealed only 13% still looking for a full-time position. A University of Waterloo study of its 1978 graduates revealed that 20% were still looking for employment one month after graduation. Considering that the average number of weeks of unemployment among Canadian youths aged 15-24 in 1977 was 17.2 weeks, the Western and Waterloo unemployment rates four months and one month after graduation are not discouraging. Also at Western, a March 1978 survey of 1976 and 1977 nursing graduates reported that 100% of the 1976 grads and 90% of the 1977 graduates were employed full-time in nursing.

Mentioned as often as unemployment is the question of underemployment. Although there is not a great deal of information on the subject of underemployment, the following facts are available. The Western study reported that 70% of those with jobs said that their jobs were closely related to their education and 83% said they were satisfied with their first position. Western nurses are finding employment in nursing and only one of the 1976 class and five of the 1977 class had to look outside Canada for a nursing position while 77% of the 1976 class and 68% of the 1977 class found nursing employment in their positions were career-oriented and that 70% were satisfied with their first position. The MCU study of 1975 graduates indicated that, in all subject categories, bachelors graduates experienced gains in employment quality (i.e. getting jobs in their field of study) compared to the 1974 cohort while community college grads experienced some decline compared to the 1974 cohort. The majority of university graduates with jobs seem quite happy and satisfied with their first position and many of the positions are both career-oriented and related to their education.

With regard to PhD graduates, the 1976-77 report of the Canadian Association of Graduate Schools on PhD employment pointed to a remarkable consistency over the period 1971-72 to 1976-77 in the proportion of PhD graduates going into various categories of employment. In particular, unemployment among PhD graduates at the time of graduation has remained between 3% and 5% over the period 1971-72 to 1976-77. The pattern of employment of Canadian PhD's has remained quite steady over the past several years and there seems little substantiation for reports of widespread unemployment among recent PhD graduates.

The quickly changing nature of the job market makes it difficult for any central manpower agency to predict what types of jobs will be in demand in five years time. Since it does take four years to get an honours bachelor degree, it would certainly be unwise for students to make their long-term career decisions solely on the basis of the current job market. Potential university students must not sell their future careers short because of immediate concerns about unemployment. It will always be possible for the very best people in any given field to obtain employment regardless of the job market.

Professor O. Mehmet of the University of Ottawa, in his paper *Economic Returns on Undergraduate Fields of Study in Canadian Universities, 1961 to 1972,* concluded that demand factors (as reflected by changes in the Canadian GNP) were far more important than increased supply of university graduates entering the labour market in explaining the dramatic shifts in the university graduate labour market during 1961 to 1972. If the economic expansion of the 1960's had persisted into the 1970's it is virtually certain that the additional university graduates would have been absorbed with little difficulty. The problem is not over supply by universities of highly educated manpower but lack of demand linked to the overall economic recession. If a university education is regarded as an investment process and the cost of a university education regarded as human capital formation, then the yield on this investment was determined by Professor Mehmet to be 15% in 1961, 22% in 1969 and 18% in 1972 — all attractive yield rates.

Since education is a multi-faceted activity with purposes and objectives beyond those related to economics and careers, there are many reasons for attending a post-secondary institution. It is not surprising that a large number of university students would describe the motivations and rationale for their choices of study in vocational terms and, from the mid-sixties onward, post-secondary education has become tied to greater chances of favourable employment. A 1974-75 survey by the federal Ministry of the Secretary of State revealed that 40% of students in undergraduate general programs and 51% of the students in undergraduate professional programs cited job-related considerations as the most important factor in choosing a program of study. By contrast, 36% of the general students and 37% of the professional students broadening of knowledge. It would appear that as many students attend cited university for economic reasons as they do for other reasons.

A study by the Committee on Post-Secondary Education of 1960, 1964, and 1968 graduates of Ontario universities found that 51% of the students were influenced, in choosing their major field of study, by the kind of work they wanted to do after graduation while 39% were not influenced by job considerations. Based on these two surveys, student motivations seem to have changed little in the decade between the mid-sixties and mid-seventies.

In its 7th annual report, the Economic Council of Canada suggests three broad social goals of university education: 1) cultural development of Canadian society, 2) distribution of equality of opportunity, and 3) contribution to economic growth. If it is understood that the primary focus of most undergraduate programs (excluding professional programs) is towards cultural and human development and equalizing the distribution of opportunity, then the primary benefit derived from such programs for the individual is expanded opportunity and greater adaptability within society. The capacity to accommodate to change is one of the more important social benefits derived from higher education and, as a result, most baccalaureate graduates, particularly those in general programs, can expect substantial career mobility.

It is becoming increasingly clear that if the skills of the ever-growing number of new post-secondary graduates are not harnessed by employers, they may have missed a dazzling opportunity. Never in the history of Canada have the conditions been so favourable for an economic takeoff — a critical mass of a young and highly educated work force, a technological infrastructure in which to put them to work, and the natural resources to sustain it.

This report was prepared for the Ontario Confederation of University Faculty Associations.

Quebec government policy and cultural development

by Jean-Pierre Chalifoux

Early last summer, the Quebec government published a document of some 430 pages entitled *A Cultural Development Policy for Quebec.*[1] This white paper, prepared by the members of a standing committee of the Quebec cabinet, is presented under the signature of Dr Camille Laurin, Minister of State for Cultural Development.

The document describes the problems and the basic orientations that will shape the future actions of the Quebec government in the field of culture. It was presented to the members of the National Assembly following a decision of the cabinet. It sets out policies that will be set in motion during the next two years.

Cultural democracy

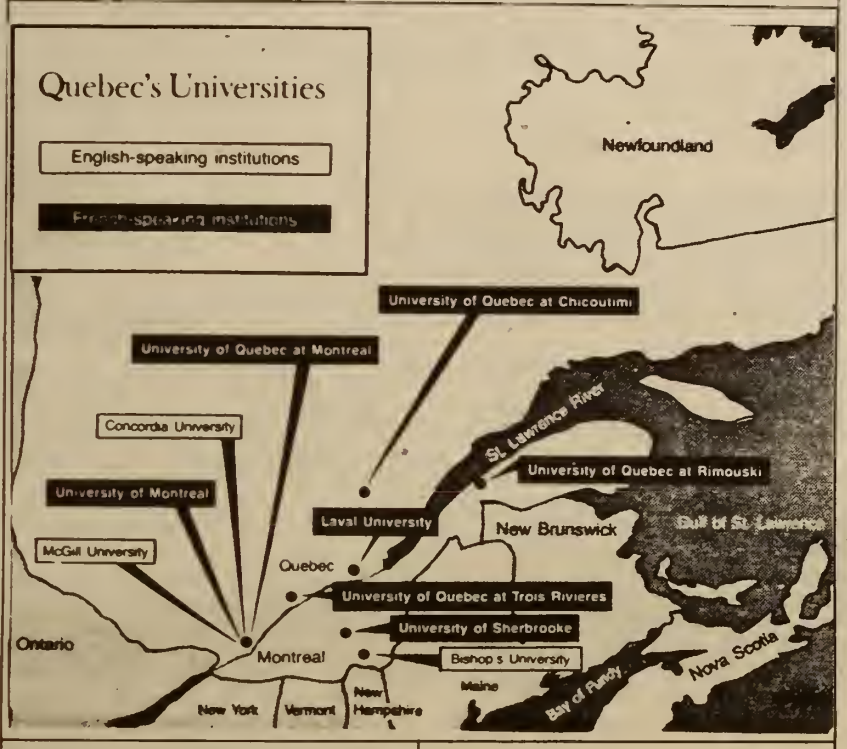
Published in paperback form, the white paper contains twenty chapters divided into two volumes. The first volume, entitled "A General View", contains six chapters dealing with economic development, cultural development, social development and territorial planning. In the words of Dr Laurin in his Foreward, "There is nothing more essential... than a policy of complete and collective development." (p.4) He stresscs, however, that "the proposed solutions do not give the government the main role: the people themselves must create their culture". Thus the central theme of this white paper on cultural policy is, according to the expression used by Dr Laurin, "cultural democracy".

A better life: creative activity, education and research

The second volume, which contains chapters 12 to 20, is entitled "The Three Aspects of the Policy". It proposes, *firstly,* a policy on lifestyles which covers such areas as habitat, health, leisure, work and communications; *secondly,* a policy on creative activity which is based on the development of scientific research, the flowering of the arts and literature, and expansion of cultural industries; *thirdly,* a policy for education and the propagation of culture. The latter topic covers the development of the national heritage, measures to stimulate culture, a better means of propogating scientific knowledge and a revival in education. It is mainly this second volume that contains the proposals which are likely to affect the future of higher education in Quebec.

An unfinished portrait

It should be noted here that the white paper touches only briefly on the subject of universities; thus, in order to obtain an overview of the measures that will affect the development of Québec's universities in the coming years, we will have to await the appearance of the green paper on scientific development [2] and the report of the study commission on higher education.[3] Two other documents must also be taken into consideration for this purpose, namely, the white paper on college education[4] and the green paper on elementary and secondary education.[5] For the moment, though, the white paper on cultural development indicates that major changes are forthcoming. On this subject, two major areas of concern deserve special attention: first, the establishment of a policy on scientific research, and secondly, the development of a new approach to university education.



Research

As regards scientific research, the white paper on cultural development has the following to say:

"The Green Paper on scientific research policy which will contain detailed proposals will soon be ready for presentation to the general public, and more particularly to the scientific community. The government hopes to begin implementing the policy within the next two years. Such a policy is of the greatest concern to our culture. It is also essential to our economy: we will never be able to develop our small and medium-sized businesses without strong research support. Furthermore, we must ensure that our young researchers find work, for if the present situation continues they will be reduced to the status of highly-educated unemployables." (p.427).

In the conclusion, on page 431, the authors of the white paper return to this point: "No government of Quebec has hitherto succeeded in formulating a research policy that takes into account our situation and our needs; we are accustomed to thinking that Quebec's contribution ought to be 'complementary' (a frequently used word) to that of Ottawa. 'Complementary' means subordinate, supplementary, fragmentary. The upcoming Green Paper on scientific research policy will shed much-needed light on the subject, and at the same time show what immense difficulties face us at the start in launching a relevant and effective policy of academic, industrial and governmental research."

Having noted the "impossibility of measuring the usefulness of science, and even less of scientific research", having indicated that "economics cannot give a technical answer to this question", and having stressed that "science cannot be regarded as mercenary or international", the authors submit that "the objective of a science policy can no longer be merely an increase in the fund of knowledge", but also "application of existing knowledge".

Several statistics

In chapter XII of the white paper, entitled "Developing a policy on scientific research", certain passages provide the following details on the research situation in Quebec: the Quebec government devoted $36 million to research in 1976-77, while the federal government spent about $1 billion for the same purposes during the corresponding period. Federal laboratories located in Quebec alone received, in 1976-77, funding equivalent to the entire research budget of the Quebec government, namely, $36 million. Again in 1976-77, the Quebec government distributed $12.5 million to university researchers, whereas the federal government had for its part distributed $31.8 million to the same group the preceding year. It is worth nothing, however, that 85 per cent of federal funding to Quebec universities was earmarked for health sciences, natural sciences and engineering, whereas 63 per cent of the students enrolled in doctoral programs in Quebec universities were to be found in the social sciences. On this point, the authors of the white paper comment on "the failure of successive governments in Quebec to appreciate the function and importance of a scientific policy, and their readiness to leave this to the federal government."

A stand-in role

As a consequence, the white paper indicates that there will be major changes in the mode of financing university research in the coming years. These indications are, moreover, largely confirmed by a statement made by Education Minister Jacques-Yvan Morin. Speaking on the occasion of the launching of Raymond Duchesne's book entitled *La science et le pouvoir au Québec 1920-1965,* [6] Mr Morin said, "For the past several years, university research has been the object of considerable attention in Quebec — much greater attention, in fact, than has been given to research by government or the industrial sector."[7] He added that "toward the end of the 1960's and at the beginning of the 1970's, the university was seen as the most appropriate place for the performance of research of all types."

Mr Morin believes that the time has now come to call into question this role — which he sees as a stand-in role — played by the universities in the field of research. It is clear, he says, that "research policies have concentrated on university research and treated the university as the single most appropriate place for this activity; this has had the effect of slowing the development of research in government and industry."

The FAPUQ is thus expecting to have to take vigorous action in this area in the coming months.

Teaching

The second aspect of the white paper that merits our special attention concerns the reorientation of administrative and pedagogical policies. The authors of the paper state that the study commission on universities will submit its report in December of this year and adds that in subsequent months it will be necessary to establish a development program for the universities. Their diagnosis of the condition of Quebec universities reads as follows: "The universities have had to meet major challenges over the past few years..." Nevertheless, "there have been no major structural changes in the universities; they have not been subjected to far-reaching educational reforms." (p 397).

At the present time, "the university is an institution too often noted for anonymity, individualism and bureaucracy prevailing in human relationships". In the coming years, it will be necessary to achieve some form of co-ordination between universities and the labour market. Co-ordination, participation and planning will be required to re-establish the humanistic role of the university. Thus the white paper reiterates, in its own manner, the basic position taken in the "Document de consultation" [8] made public last January by the study commission on universities.

The white paper stresses the need to "return to basics" in education. It asks, "Is 'basic' not the same as 'traditional'?" and adds that "in education more than in other areas, rapid social change should impel us to look beyond summary condemnation of the past and unwarranted hope for the future, to more solid foundations". (p 415).

For its part, the "Document de consulation" suggests that "at a critical juncture such as we now face, it is important to concentrate our attention on basics and to ask ourselves fundamental questions. One such question concerns the guiding principle of the university". (p 11)

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NATIONAL NOTES

by Jill Greenwell (Relations with Government Officer)

Freedom of information notes from across Canada

The CAUT Board recently approved amendments to the CAUT Brief on Freedom of Information. Based on similar recommendations contained in the Canadian Historial Association's submission to the federal government, the amendments broaden the definition of "public records" to include such documents as those generated by royal commissions and other commissions of enquiry, drafts and working papers prepared under government contracts by persons outside the public service, papers accumulated by ministers and public servants in the performance of their official duties. The recommendations call for the development of consultative mechanisms within departments whereby the views of scholarly users can be expressed and call for specific provisions within the act granting access, under controlled conditions, to microdata in its original, complete form, and to Statistics Canada census records after a 75 year lapse.

The Canadian Historial Association has elected to adopt the CAUT position that the anticipated federal freedom of information act should contain an independent two-stage review mechanism against a denial for release of information: an initial appeal to a Freedom of Information Commissioner authorized to order the release of information, with subsequent appeals against the commissioner's decision to the Federal Court of Canada — but only on the ground of an error in law.

The final report of the Ontario Commission on Freedom of Information and Individual Privacy is not expected until fall 1979. In the meantime, the commission, headed by D. Carlton Williams, former President of the University of Western Ontario, is publishing some of its research in a series of monographs which are available, at a small charge, from the Queen's Printer, Publications Centre, 880 Bay Street, Toronto M5S 1Z8. Two of the commission's research publications already in print are Donald Smiley's *Freedom of Information: A Political Analysis* and Kenneth Kernaghen's *Freedom of Information and Ministerial Responsibility*. Donald Rowat's *Public Access to Government Documents: A Comparative Prospective* will be available shortly.

The new Progressive Conservative Government of Nova Scotia has promised to introduce a revised freedom of information act designed to reveal more about government activities and the spending of public monies. The minister in charge of the Communications and Information Centre, Bruce Cochran, has advised the CAUT that legislation, which will likely be introduced in February or early March, will (1) amend the current act to make all government information available to the public with the exception of a specific list of excluded documents (the act currently only provides public access to a narrow list of government documents) and (2) will provide an independent third party review for appeals against denial of information — most likely to be the courts. Canada's first freedom on information act was promulgated in November 1977 by the previous Liberal Government and had been severely criticized by the Progressive Conservatives in opposition.

The New Brunswick Right to Information Act is, according to ACCESS: A Canadian Committee for the Right to Public Information, the best of those available in all the Commonwealth countries. The Act, which has not been proclaimed yet, provides a two-pronged independent review mechanism (either through a judge of the Supreme Court of New Brunswick with authority to order the release of a document, or to the ombudsman who has recommendatory authority, and with subsequent appeal to the Supreme Court). Under the Act, the minister bears the onus of demonstrating that there is no right to certain information in any denial of information. The list of excluded material is, however, according to an expert in the field of freedom of information, not entirely satisfactory since it fails to provide access to a variety of information, including documents dealing with policy making.

Federally, it now seems that the FOI bill will not be introduced before the end of January 1979, by which time the Canadian Bar Association's draft FOI bill will have been made public. The CAUT urges its members to study the two documents and to react publicly and in letters to members of parliament and to cabinet ministers as soon as possible after their release.

External Affairs adopts Symons Commission recommendation

The Department of External Affairs recently announced the formation of an Advisory Committee on Academic Relations to assist the Department in obtaining, on a systematic basis, advice to ensure that its programme of academic exchanges is relevant in light of rapidly changing circumstances. The creation of the committee was recommended to External Affairs in the Report of the AUCC Commission on Canadian Studies. A majority of the membership is from the academic community, and includes Tom Symons, former President of Trent University and Chairman of the AUCC Commission.

Academics have for a number of years participated in various departmental activities, including seminars on foreign policy themes, juries for academic exchange programmes, and the selection of professors for special assignments such as in the area of Canadian Studies of universities abroad.

ILO responds to CAUT complaint

The International Labour Organization's Committee on Freedom of Association recently requested the Alberta Government to supply it with information concerning the right to organize of college and university faculty, the right of such workers to engage in collective bargaining on terms and conditions of employment, and the machinery available for the settlement of disputes.

The request stems from a formal complaint submitted by the CAUT in December 1977 that provisions of Bill 41 (the Public Service Employee Relations Act, 1977) were in direct contravention of ILO Convention 87 and prevented university faculty from exercising their right to organize under that Act or the Alberta Labour Act. The CAUT, in its submission, claimed as well that faculty associations were restricted in organizing their administration and formulating programmes, and that the authorities were interfering with the otherwise lawful activities of employee organizations.

The committee, responding to a similar complaint by the Canadian Labour Congress on other aspects of the Act, has recommended that the prohibition against strikes be confined to services which are essential in the strict sense of the term (Alberta Liquor Board employees, for example, were prohibited from striking); and has recommended the extension of matters which may be referred to arbitration (the organization of work, the assignment of duties, the determination of the number of employees, systems of job evaluation, selection, appointment, promotion, lay-off, termination, discipline, and pensions were excluded from arbitration under the Act).

Status of women meeting in Ottawa

The Economic Realities for Women 1979 is the theme of the National Action Committee on the Status of Women's annual meeting in Ottawa at the Skyline Hotel, March 23-26, 1979. There will be workshops on women in the work place, women on welfare, pension or benefits, and women in the home. The NAC has in recent months been actively lobbying the government on changes to the Unemployment Insurance Act and their impact on women workers, the effect of family allowance changes on low income families, and the CBC's attitude towards the portrayal of women.

CAUT seeking comment on constitutional changes

Concerned by some of the implications of the federal government's constitutional proposals dealing with fundamental rights and freedoms and their ultimate impact on university faculty, the CAUT, at the request of the Queen's Faculty Association, has asked a number of constitutional experts across the country to comment on sections 23 and 25 of Bill C-60 (Third session, Thirtieth Parliament). It has been suggested that the language of section 25 may place a great variety of legislation in a situation superior to the bill of rights; also, that the vagueness of the language could allow the government to override civil rights at will and, as well, cause endless judicial review. The CAUT may, after consideration of these comments, present its views to the government on this particular aspect of the bill.

Full cooperation on amendment to the University of Toronto Act

As a result of concerted lobbying by, among others, the University of Toronto Faculty Association, OCUFA and CAUT and all three political parties, the Ontario government has decided to amend Bill 147 which would have allowed the President of the U of T to delegate power to recommend dismissals of academic staff. The revised act, given third reading on December 15, 1978, now permits the president to delegate his powers to recommend appointments and promotions but not dismissals of the teaching staff. The quick and strong opposition to the delegation of dismissal authority stems from the famous case of Professor Frank Underhill in 1941 when his threatened dismissal for blatant political reasons was blocked by the refusal of President Cody to make a recommendation to the Board of Governors. A provision permitting the Board to take personnel action only on the recommendation of the President had been added in 1906 to prevent political meddling.

Tariff proposals would create bureaucratic nightmare for universities

Federal finance officials are currently studying a Tariff Board report on tariff items 69605-1 and 69610-1 under which universities and colleges, among others, currently import a wide range of articles duty-free (see Ottawa Notes, CAUT Bulletin, May 1978). In an effort to encourage Canadian production of a variety of goods, including scientific apparatus, reagents and certain kinds of laboratory glassware, the Board has recommended that the scope of these tariff items be restricted, but that duty-free benefits be maintained wherever possible for goods unobtainable in Canada, or where the impact on Canadian manufacturers is minimal.

The Board has proposed, for instance, that apparatus, utensils and instruments imported by institutions such as universities for use directly in teaching or research should be dutiable at the same rates as those paid by non-institutional purchasers, but would be subject to a complex duty remission programme if the goods were "deemed to be not available from domestic production". Moulded glassware for laboratory use, maps, films, microfilms, slides, pamphlets, magazines, models, and sound recordings would continue to be duty-free. All chemicals, except those not produced in Canada which are used for diagnostic purposes by public hospitals would, however, be dutiable.

A Tariff Board official readily admitted that the recommendations, if implemented, would create considerably more paper work for both universities and the federal government. The CAUT, the Canadian Federation of Biological Societies, the Canadian Association of University Business Officers and AUCC are studying the implications of these proposals and will be meeting jointly with Finance officials as soon as the study has been completed. The Finance Department is ultimately responsible for accepting or rejecting the Board's recommendations to change the current tariff schedules.

The weakest link

A technological perspective on Canadian industrial under development

by John N.H. Britton and James M. Gilmour, assisted by Mark G. Murphy

Canada is in the throes of an economic crisis. The standard of living has dropped from its post-war path of rapid increase. Stagnation and lack of direction in the pattern of economic change have set in. Nowhere is this more evident than in the manufacturing sector which has proved ineffective in selling abroad and in holding its own in the domestic market.

As well as suffering from ills afflicting most of the industrial countries — the world recession of the early 1970s, the oil crisis, high wage settlements, stagflation and the 1974 recession - Canada is debilitated by self-inflicted wounds caused by the cumulative effects of long standing domestic policies. Decades-old structural distortions and deficiencies in trade, employment and industry are obvious symptoms of national economic distress. In secondary manufacturing, notably in the production of technology-intensive goods, Canada has experienced trade failure throughout the post World War II period. But the excess of high technology imports has now reached such proportions that it has become a major reason for Canada's particularly poor general trading pattern.

Canadian weakness in trade and industry (particularly manufacturing) is getting worse. The Canadian economy is not responding adequately to the profound structural changes that are occuring elsewhere in the globe. All "developed" countries face the same competitive pressures to progress technically and to maintain or improve their terms of trade, but most have proved themselves more able than Canada in the articulation of national goals, the development of coherent industrial strategies to achieve those goals, and the establishment of the new centres of growth without which their economies cannot progress. The Canadian response is inadequate; it reflects a long history of underdevelopment, dependency and a failure to understand the precarious world position of Canadian industry.

Trade Failure

Canada's trade patterns are those of a primary goods hinterland. On balance, in contrast to industrial nations, Canada is an importer rather than an exporter of finished goods. Until recently this state of affairs has not prevented us from enjoying an enviably high standard of living or from entertaining the belief that the transitions from semi-industrialism to full-bodied industrialism, and from dependence to interdependence, would eventually be made. But the nation has not been making these transitions. Indeed, industrial self-sufficiency is declining in relative terms.

Canada's traditional trading patterns are no longer capable of sustaining our economic needs. The customary positive balance in resources trade is more and more obviously insufficient to offset deficits in fully manufactured goods and in invisibles (mainly trade in services). Canada's trading situation is bound to deteriorate without a major overhaul of the economy. Trade in energy will probably show a sizeable deficit by the 1980s. Many of Canada's resource industries are at a mature stage of development, and other countries are emerging as the growth locations. They are cutting into Canada's share of international sales and are laying first claim to growth in what used to be our traditional markets. On balance, then, Canada can no longer fall back on the export of resources to offset increases in imports of manufactured goods and invisibles.

Secondary manufacturing industry and the service industries are under great pressure to attain an international position consistent with Canadian industrial development. But invisibles have been consistently a large negative contributor to the Canadian balance of payments. This situation, not surprisingly, is consistent with our foreign capital dependence and our inability to earn sufficiently in international markets, in terms of professional and other business services, to offset dividend flows. Canada's hope for the future, therefore, is in the trade of manufactured goods, presently a disaster area. From 1964 to 1975, imports increased 2-1/2 times, while the domestic market increased by 1/3. The growth of manufacturing has not matched the growth of the economy and relative de-industrialization has been the consequence.

The export situation is no better. Except for the Auto Pact, there has been no fundamental change in the pattern of Canada's export business over the last twenty years. Canada's share in world trade of manufactured goods has been dropping. If Canada had been able to maintain its 1968 share of world trade in manufactured products, let alone increase it, as was the case with most industrialized countries, an additional $8.5 billion worth of exports would have been gained in 1975.

Stunted Industrial and Employment Structures

The failure of manufacturing to compensate for the decline in the growth potential of our resource industries is partly rooted in our industrial structure. Comparisons among Canada, the United States, and Western Europe reveal Canada to be underdeveloped except in primary resources processing and mature manufacturing industries. During the past 25 years Canada has had low comparative levels of activity in the growth industries that have been entrenched in the industrial specializations of Western Europe and the U.S. by virtue of technical excellence, massive investments in R & D, and innovations in products and production processes. Moreover, our relative weakness is getting worse.

Structural changes in employment in both the services and the goods producing industries attest to broadly based technological failure. Industrial development has entered what is sometimes described as the "third wave of industrialization". In the advanced economies the amount of manpower (and other factors of production) is becoming less important than the increasing quality of labour (and other factors) and the ability of business to utilize this higher quality. The increases in quality are created by the systematic application of scientific, technological and managerial knowledge.

Canadian industry is not a full participant in these far-reaching changes. Managerial, scientific and technical skills are not being applied to goods production at the same rate as in the countries of our competitors. Between 1961 and 1971, in relative terms, quaternary employment (managerial, administrative, technical and scientific employment) increased in most industrial countries, while in Canada it declined. During this period, there was a relative reduction in managerial jobs within manufacturing of 41 per cent. Professional and technical jobs in Canada managed to increase their share of employment in manufacturing by six per cent; in the US this job category expanded by more than 30 per cent. Unless strong corrective policies are applied, the future competitiveness of Canadian industry, both at home and abroad, will be in a worse state than it is today.

Reasons for Industrial Weakness

No single factor or event explains our industrial dilemma. Some commentators would have us believe that most of the blame should be attributed to the general environment created by our protectionist policies. There is no doubt that certain undesirable characteristics of our manufacturing sector — fragmentation, low productivity, lack of entrepreneurial initiative — have some connection with our long history of tariff protection. But the proponents of this view have argued largely from a theoretical position rather than from pragmatic evaluation of the facts. Because of the widespread use of duty exemptions, Canada leads the industrialized world as a practitioner of free trade. Canada admitted about 53 per cent (dollar value) of its imports of finished manufactures duty free in 1970, compared with about six per cent (dollar value) in the United States, and just over three per cent (dollar value) in the EEC (European Common Market) and Japan.

Foreign ownership is a much more significant contributor to our overall industrial problems than the level of tariff protection "enjoyed" by Canadian industry. High levels of foreign ownership and the resulting truncation of Canadian industry and firms have an impact not only on the optimal size of plants and production runs in Canada, but also on the evident tendency of foreign subsidiaries to import materials, parts and services. The ability of foreign-controlled firms to export is also affected because advanced technology is not as accessible to them as it should be. Foreign ownership tends to shift the location of research, development, design, marketing and other professional services out of the country, thus narrowing the number and range of job opportunities in Canada, as well as weakening the ability of foreign subsidiaries to compete in international markets that are increasingly technologically oriented. In addition, much of the foreign direct investment in Canada is for the purpose of servicing the Canadian market. Few opportunities are given to foreign subsidiaries to contribute to exports.

Of all the major consequences of foreign direct investment perhaps that with the greatest long-term significance is the impact on the technological and innovative capability. Technological capability is the ability to solve scientific and technological problems and to follow, assess, and exploit scientific and technological developments. Of even greater significance is innovative capability which is concerned with the design and engineering of new products and production systems. Innovative capability will often make commercial use of available technology, but the ability to "assess and exploit" known technology is exercised in terms of an assessed market segment — consumer needs, tastes and potential sales — with success being dependent on product design, price and marketing. In this way innovative capability is concerned with the technical utility of products and other features — including efficiency, reliability and aesthetic appeal essential to best market performance. For an industrial nation, our capability in this area is at a distressingly low level.

Until recently, Canada achieved modest development in its manufacturing sector without a parallel level of development in technological and innovative capability. Our policies placed a very high reliance on foreign direct investments and the importation of technology in the form of finished components, design specifications and skilled personnel. Remarkably little reliance was placed on the development of a domestic technological and innovative capability. In consequence, most of our larger firms are foreign controlled and technologically dependent or imitative; they lack innovative capability and are frequently truncated in terms of management. Most of our smaller firms are domestically controlled, technologically unprogressive and often unaware of "state of the art" technology.

In a static world, this state of affairs

may not have given rise to concern, but fundamental changes, occurring at the global level are placing Canadian manufacturing in a most precarious position. Technological and innovative capability and industrial know-how are the major determinants of international competitiveness for advanced countries. Canadian industries are increasingly non-competitive in mature technology products (i.e., radios, shoes, plastic products, simple metal goods, textiles, etc.), the very areas in which the newly industrializing countries are experiencing great success. The general environment needed to switch over to the technology-intensive products in which high wage countries (for example, the United States and Japan) have hopes of remaining competitive is simply not in place here. Canadian secondary manufacturing finds itself faced with the threat of extinction, except in the production of goods protected by high transportation costs. At the low and mature ends of the technology spectrum our manufacturing is being eroded. At the high-technology end there is very little compensating expansion. Unless Canada can enhance the quality and performance of its manufactured goods, through improved industrial technology, the erosion of our manufacturing base will continue.

Some observers view this very real possibility with indifference. Canada was never really an industrial country, they say. Our future interests will be best served by post-industrialism. This is naive as well as dangerous thinking. In the first place, the Canadian economy, like other industrial economies, is still dominated by the production of goods. Secondly, although the workforce directly employed in manufacturing is in relative decline, a growing proportion of service industry activity and employment is linked to and dependent upon manufacturing. Technological and organizational change is divorcing more and more workers from the direct manipulation of materials, while at the same time generating demands for a widening range of specialized and skilled services which increasingly are met by the tertiary sector rather than from within manufacturing. In 1971, thirty-three jobs in the service sector were linked to each 100 jobs in the manufacturing sector. Moreover, manufacturing is growing in importance as a market for service activities. It is clear that Canada cannot withdraw from manufacturing without experiencing a significant and detrimental impact on employment opportunities in the service sector.

Canada must accept that a flight from industrialism in an invitation to economic disaster. We must begin immediately to take whatever steps possible to revitalize our manufacturing sector. This means improving the general economic environment in which manufacturing has to operate. It also means building technological and innovative competence, which in turn requires recognition that R & D and domestic innovation will not be developed in the majority of foreign subsidiaries that currently dominate the high-technology industries. Given the operating environment provided by Canada, these firms have developed managerial and scientific functions consistent with corporate goals, and patterns of organization that favour minimal levels of autonomy and quaternary employment in the host economy. Canada urgently requires policies that reflect understanding of this situation. Without such policies it will not be possible to restart the process of technological and industrial evolution.

Guidelines for Technology Development

Exclusive focus on "high technology" would, of course, be naive. Technological capability underlies all production and innovative capability; it is pertinent to all industrial undertakings, not just those associated with high-technology products or new automated production systems.

To improve its competitive position, Canada requires a technology development policy embedded in a wider industrial development strategy. Four main policy directions are suggested:

(1) Increasing the Demand for Canadian Technology

The low level of technological capability in Canada reflects, in part, the weak demand for Canadian technology. It is important that a concerted effort be made to raise the level of demand. This entails redirecting to Canadian sources demand that is presently directed to foreign sources. It also means generating new demand for technological activities.

Canadian industry, because of underdevelopment, especially in research intensive industry, and because of the truncation associated with foreign ownership and control, is exerting a weaker demand for indigenous technology than would be expected of manufacturing in a developed economy. Over the long term, only policy measures aimed at the creation of profitable, efficient, technologically progressive firms will overcome this problem.

We must turn to the public sector for more direct and more immediate effects on the level of demand for Canadian technology. Government purchasing power is the most obvious means of raising the demand for indigenous technology. There are three distinct ways in which government purchasing can be used.

1. Preferential treatment for Canadian goods, services and technology;
2. Government purchasing tied to policies reflecting the identification of national or provincial economic or social needs (for example, linking purchasing policy to major programs, such as the electrification of our railway system);
3. Recognition that the financial participation of government in investment projects constitutes an important instrument for increasing the demand for Canadian technology. Indeed, government financing of investment projects may well be one of the most effective mechanisns to insert the technological perspective in development planning. It is very probably the *best* way to generate a demand for local technology.

(2) Increasing Canada's Capacity to Develop Technology

In the past Canada did not lack policies to stimulate technological innovation, but success was limited. The problem is that these technology explicit policies were not aimed at the abolition of the fundamental impediments to the development of technological and innovative capability. Policy rested on the assumption that R & D creates industrial strength, when in fact it is industrial strength which creates a fertile ground for research and development.

Increasing the supply of technology created in Canada is intimately bound up with the problem of creating strong, competitive, Canadian firms. We need a set of policies designed to encourage rationalization and specialization in manufacturing; we need a comprehensive *industrial strategy*. Such a strategy would include selective industrial development, especially through the support of core companies; the promotion of mergers, joint ventures and consortia; and special measures to strengthen small business.

(3) Increasing the Capacity for Technology Absorption at the Enterprise Level

Technology absorption, the assimilation and improvement of technology already employed by firms, depends on production research, plant optimization, product development, the search for minor innovations, adoption or improvement of quality control standards, access to scientific and technological services directly linked to productive activities, and access to information about practices in other firms.

An outstanding characteristic of Canadian-controlled firms is their technological isolation and backwardness. The vast majority are small, and their ability to remain technologically up-to-date and efficient seems to be less effective than is the case for small firms in other industrial countries. As a group, small Canadian firms will neither increase their productivity nor improve upon their innovative capability unless they have access to a continuous and systematic flow of information and advice on product and production technology and how to use it.

One promising solution to this problem is the creation of sectionally-oriented technical centres that are knowledgeable of the problems faced by small firms. Such centres would act as technological interfaces between, on the one hand, the many sources of technology and other information and, on the other, the many companies which can benefit so much in competitive ability from changes in product design and process technology.

As well as serving to speed up the diffusion of technology, such centres could provide a linking function between firms with new product ideas and product design and marketing specialists. By helping firms to combine existing and new technology with good product designs and marketing research, they could play a valuable role in fostering the competitive capability of our industry.

(4) Regulating the Process of Technological Importation

In the future as in the past Canada will obtain most of its technology from abroad. But, to ensure the future presence in Canada of a viable manufacturing base requires a reduction in the dependence on foreign technology and the exercise of careful control over its purchase. From exceptionally severe technological dependence, *Canada must move to technological interdependence.* Uncontrolled incremental technology purchasing must give way to purchasing that is consonant with and complementary to industrial development goals.

Foreign technology, as such, is not a problem for Canada. The dilemma emerges from the way in which foreign technology is obtained, how and when it is put to use, and the ways in which it is related to the Canadian economic system. Canada has failed to capitalize on many of the opportunities afforded by purchased foreign technology for the creation of an indigenous technological capability

and has relinquished many industrial growth opportunities that can flow from the use of foreign technology.

Complementarity between the importation of foreign technology and Canada's industrial and technological priorities and objectives, as defined by an industrial strategy, is required. Thus foreign technology and foreign investment should be reviewed against and guided by the following considerations:

1. To increase the advantages Canada gains from imported technology by ensuring that imported technology enhances instead of reduces Canadian technological capability;
2. To coordinate and harmonize technology importation, with the selective development of Canadian technological capability, in particular, and with the means and objectives of an industrial development strategy in general. For example, in the use of an industry that is being encouraged to rationalize, it would make no sense to allow a new foreign firm whose presence would only intensify the need for rationalization;
3. To increase the bargaining power of Canadian buyers of technology, (for example, by keeping them informed of alternative sources of technology);
4. Reduce the negative effects of technology imports, (for example, reducing the restrictions placed on Canadian licensees in technology licensing agreements).

When Canada sees fit to create an industrial strategy, many years will be needed to achieve solid gains. But there is a fast spreading malaise all too evident in Canadian industry now and which, if not checked in the near future, may so weaken our industry that an industrial strategy may come too late to save it. Fortunately, certain remedial actions can be taken quickly: immediate actions or incentives for the formation of consortia; redirection of government procurement policy. Measures that would greatly increase R & D activity and incentives to increase exports could also be most beneficial. These and other steps, however, will not be sufficient to put the Canadian industrial house in order. Only fundamental change directed by a coherent industrial strategy is capable of generating long-term industrial viability.

This paper was prepared for the Science Council of Canada.

New "Core Curriculum' for Harvard

The council of Harvard University's faculty of arts and sciences has approved a new "core curriculum" for its undergraduate body which is likely to have a broad impact on higher education throughout the United States.

The new core curriculum, which replaces the general-education program that has been the staple of undergraduate life at Harvard since 1945, is generally considered one of the most important of many curriculum reform efforts at colleges and universities around the country.

The aim of the new curriculum, as expressed in the Harvard core curriculum report approved by the council, is "to have students acquire basic literacy in major forms of intellectual discourse."

The curriculum eschews survey courses, distribution requirements, and the "great books" approach, opting instead for "substantive" course requirements in five areas: literature and the arts, history, social and philosophical analysis, science and mathematics, and foreign languages and cultures. Curriculum guidelines include requirements for basic courses, in addition to those in the core curriculum, in expository writing, mathematics, and foreign languages.

Following is the introductory section of Harvard's report on the core curriculum:

* * *

Every curriculum is shaped by a set of requirements leading to the award of a degree. This is true at all levels of education. Degree requirements are the standards—the *minimum* standards — of higher education. Individuals may exceed standards, but they are not at liberty to fall below them.

Requirements are also an assertion of priorities. Under a free elective system these may be no more explicit than the completion of a fixed number of courses; at the opposite pole stands the totally prescribed curriculum in which the substance as well as the number of courses is fixed. Neither extreme can be rejected on *a priori* grounds, and many variations are possible. The critical task is to justify a particular set of requirements to ourselves and to our students on intellectual grounds.

The proposal for a core curriculum presented in this report starts with the search in the 1970's for a general standard for undergraduate education at Harvard. Our focus is on the individual student. What does our Faculty and our university mean when we welcome a student at graduation "to the company of educated men and women"? What are the characteristics of an educated person and how can curricular requirements help to foster these?

The Dean's Report for 1975-76 ("Undergraduate Education: Defining the Issues") attempted to state in very general terms the elements of a standard that meets the needs of the late twentieth century. These elements, reviewed below, underlie the proposed Core Curriculum.

1. An educated person must be able to think and write clearly and effectively.

The Core Curriculum reaffirms the importance of an expository writing program and seeks to improve the present program by combining instruction in writing with substantive core courses.

2. An educated person should have a critical appreciation of the ways in which we gain knowledge and understanding of the universe, of society, and of ourselves. Specifically, he or she should have an informed acquaintance with the aesthetic and intellectual experience of literature and the arts; with history as a mode of understanding present problems and the processes of human affairs; with the concepts and analytic techniques of modern social science; with philosophical analysis, especially as it relates to the moral dilemmas of modern men and women; and with the mathematical and experimental methods of the physical and biological sciences.

It is important to notice what is *not* being proposed in the Core Curriculum as well as what *is* being proposed.

We are not proposing an identical set of courses for all students, and we are not proposing an even-handed introduction to all fields of knowledge. The proliferation of knowledge makes both of those goals impractical, except at the cost of severe simplification and the loss of either range or intellectual quality.

We do not think there is a single set of Great Books that every educated person must master, and we do not think an inevitably thin survey of the conventional substantive areas—humanities, social sciences, and natural sciences—is any longer useful. Nor do we think a loose distribution requirement among departmental courses can convey specifically enough what the Faculty believes to be the "knowledge, skills, and habits of thought" that are "of general and lasting intellectual significance."

Our goal is to encourage a critical appreciation of an informed acquaintance with the major approaches to knowledge, not in abstract but in substantive terms, so that students have an understanding of what kinds of knowledge exist in certain important areas, how such knowledge is acquired, how it is deployed, and what it might mean to them personally.

We seek, in other words, to have students acquire basic literacy in major forms of intellectual discourse.

To this end we are proposing requirements within several areas.

A Literature and the Arts requirement will acquaint students with important literary and artistic achievements and will aim to develop a critical understanding of how man gives artistic expression to his experience of the world.

A History requirement will focus on major aspects of the present world viewed in historical perspective and will attempt to lead students to an understanding of the complexity of human interaction in specific situations in the past.

A requirement in Social and Philosophical Analysis will introduce the central concepts and ideas of social science and moral and political philosophy and will develop students' analytic skills in addressing fundamental aspects of individual and social life in contemporary society.

Finally, a Science and Mathematics requirement will acquaint students with basic principles of the physical, biological, and behavioral sciences and with science as a way of looking at man and the world. In addition, a new standard of competence in mathematics will ensure familiarity with quantitative reasoning and the mastery of basic algebraic manipulations. These will underpin further study throughout the curriculum.

3. An educated American, in the last third of this century, cannot be provincial in the sense of being ignorant of other cultures and other times. It is no longer possible to conduct our lives without reference to the wider world within which we live. A crucial difference between the educated and the uneducated is the extent to which one's life experience is viewed in wider contexts.

A Foreign Languages and Cultures requirement in the Proposed Core is specifically designed to expand the student's range of cultural experience and to provide fresh perspectives on his or her own cultural assumptions and traditions. This aim may be achieved through core courses in Literature and the Arts, History, or Social Analysis, or in special courses in Foreign Languages and Cultures. The intention here is not merely to avoid an exclusive focus on Western traditions, but to expose students to the essential and distinctive features of major alien cultures, whether Western or non-Western.

4. An educated person is expected to have some understanding of, and experience in thinking about, moral and ethical problems. It may well be that the most significant quality in educated persons is the informed judgment which enables them to make discriminating moral choices.

Obviously, moral and ethical problems will appear in the study of literature, art, history, and social analysis. However, questions of choice and value are at the heart of the required work in Philosophical Analysis.

5. Finally, an educated individual should have achieved depth in some field of knowledge. Cumulative learning is an effective way to develop a student's powers of reasoning and analysis, and for our undergraduates this is the principal role of concentrations.

The Core Curriculum assumes that concentration and nonconcentration requirements have different functions in undergraduate education. Critical to all concentrations is some degree of cumulation or progression, that is, a sequence of study that builds upon earlier accomplishment within the concentration and helps to develop a level of maturity and proficiency which is the goal of concentration. In contrast, the Core Curriculum—the basic set of nonconcentration requirements—states the minimum standard of broad intellectual experience. Yet it does not simply rest on the assertion that breadth as such, or *any* form of distribution, is valuable for its own sake; it is directive and specific, in the areas stated above.

Such a Core Curriculum combined with fields of concentration addresses a wide variety of educational concerns and imposes high demands on students. But flexibility and free choice remain. Since a concentration

Berkeley faculty votes to raise standards, restore requirements

The faculty of the college of letters and science at the University of California at Berkeley has voted to reinstate undergraduate liberal-arts requirements that were dropped almost a decade ago.

The requirements are designed to insure that Berkeley's undergraduates gain broad knowledge in three fields—humanities, social science, and natural science. The changes will also raise the standards required for graduation.

At present, the college of letters and science requires, in addition to a student's major program, two courses in English and composition and eight courses anywhere outside the major. Undergraduates need no mathematics or foreign languages beyond those required for admission.

Beginning with the 1979-80 academic year, undergraduates will have to demonstrate competence in "quantitative reasoning" by taking additional math-related courses or passing an examination.

They will also have to take more foreign-language courses in high school or college.

A new distribution requirement will require students to take at least eight courses in the two broad areas outside their major field.

For example, a student majoring in physics, a natural science, will have to take eight courses in the humanities and social science.

At least two of the eight must be in the humanities and at least two in the social sciences.

The faculty is reinstating requirements because, without them, too many students have pursued a specialized rather than a broad education, according to Roderic B. Park, provost and dean of the college of letters and science.

Mr. Park said the changes at Berkeley were designed to reverse "declines in standards and in the respect accorded to education by taxpayers, by students,and often by the teachers themselves".

In abandoning requirements during the 1960's, he added, "college faculties abandoned responsibility to provide reasonable guidelines for a liberal-arts curriculum and retreated to the narrow confines of their disciplines as the basis for undergraduate education."

The new requirements will not affect students currently enrolled or 1978-79 freshmen. Ultimately, however, about 14,000 students, or three-quarters of the university's undergraduates, will be affected by them.

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YORK UNIVERSITY

Toronto, Ontario, Canada
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Vice-President (Academic Affairs)

The Vice-President (Academic Affairs) will be responsible to the President (the University's chief academic officer) for the academic administration of the University and will be expected to provide leadership in the integration and coordination of its teaching resources; to allocate and reallocate academic resources within the University; to propose appropriate relative levels of budget for the various Faculties, within the context of the overall fiscal circumstances; to modify or adapt existing programmes and develop new academic programmes to reach new categories of students, to recommend priorities to the President for academic appointments within the University The individual selected will be a member of the senior staff team supporting the President, which includes the Executive Vice-President, the Vice-President (Employee and Student Relations), and the Vice-President (University Services)

Qualifications for the position would include a background of demonstrated scholarship in the field of tertiary education, significant administrative experience in universities or similar institutions, and familiarity with Canadian education policies

York University is a publicly supported institution established in 1959 Undergraduate and postgraduate degree programmes are offered through ten Faculties York has a full-time faculty of 1,035, and full-time enrolment equivalency of 14,900 undergraduate and 1,425 graduate students

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Please address applications, together with curriculum vitae, to:
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La connaissance des deux langues officielles est requise.

S'adresser au:
Dr. Pierre Bussières, Assistant au Principal
Royal Military College of Canada
Kingston, Ontario K7L 2W3

Harvard

usually takes the equivalent of two years, and non-concentration requirements consume another year (as they already do in our present curriculum), students are able to retain the equivalent of one academic year for electives. This traditional "elective year" has an important educational function. Within it students can express their own priorities by initiating or advancing selected aspects of their intellectual development.

Core, concentration, and electives are the components of the proposed undergraduate curriculum, and their combination and interaction can yield a significantly improved education. Core areas are related to each other by a common question: what are knowledge and understanding, and how are they acquired? That different ways of looking at the unverse, society, and ourselves overlap to some degree is no disadvantage. These interpenetrations reflect the true state of learning with its ever-shifting boundaries, and also give students and faculty a greater opportunity for interdisciplinary presentations.

Core areas and concentrations are positively related and complementary. Concentrations explore a particular field in depth. The general framework of knowledge and experience gained through the Core Curriculum should enable students to improve their understanding of their chosen fields; it may increase their intellectual sympathy for others' fields of interest. Students may also be able to choose concentrations more wisely as a result of their exposure to different approaches to human experience.

Electives interact with these other elements of the overall undergraduate program in a number of ways. They allow some students to achieve greater depth in concentrations than would ordinarily be the case, others to be dilettantes in the good sense—to choose and to explore simply in order to take delight in a variety of subjects—and still others to develop mini-concentrations in allied fields. Free choice, in combination with core and concentration, is essential to full self-development, which is the primary goal of all education.

Let us summarize. The underlying conception of the Core Curriculum is a minimum acceptable standard of individual education focusing on how we gain knowledge and understanding of the universe, of society, and of ourselves. The core is not meant to stand alone; conjoined with three years of other work, it will provide a solid and shared base of general and liberal education for all of our students. The Core Curriculum is an amalgam of diverse intellectual approaches, major substantive areas of knowledge, and important basic skills. The proposal differs both from present General Education and past systems of distribution requirements. Although the quantity of non-concentration requirements will remain relatively unchanged, the categories of General Education will have been altered to reflect shifts in fields of knowledge and in approaches to learning and made more specific in purpose according to our priorities. And the present proposal has the further distinction, as opposed to distribution schemes, of calling into being courses especially designed or adapted to meet its aims.

Text of revised requirements — Berkeley

• *Following are the revised "breadth requirements" that have been adopted by the College of Letters and Science at the University of California at Berkeley.*

The candidate shall satisfy the breadth requirements specified below. No course offered in partial satisfaction of any of these requirements shall be applied toward the satisfaction of any other, but the committee on academic program is authorized to recommend exceptions to this rule.

(a) *English Reading and Composition.* The candidate shall complete, normally in the freshman year, a sequence of courses designed for the purpose of developing facility in English reading and composition. A student admitted to the college with advanced standing is required to complete such a sequence unless the student's transcript indicates the previous completion of equivalent college-level work. The standards to be applied with respect to this requirement will be determined, and the means by which the requirement may be satisfied will be recommended to the executive committee by a standing committee of the faculty of the college.

(B) *Quantitative Reasoning.* The candidate shall demonstrate competence in quantitative reasoning in one of the following ways:

(1) By satisfactory performance on an examination administered by the college or an equivalent examination administered by another educational institution or agency. The topics to be covered and the standards to be applied shall be determined by a standing committee of the college and will ordinarily presuppose completion of approximately 3-1/2 years of high-school mathematics or the equivalent.

(2) By completing with a minimum grade of C — any one college course from a list approved by the executive committee of the college on the recommendation of the committee administering the quantitative reasoning examination. Courses approved to satisfy this requirement shall be those which develop competence in quantitative reasoning at a level equivalent or superior to that of the quantitative reasoning examination.

(C) *Foreign Language.* The candidate shall satisfy this requirement in one of the following ways:

(1) By completing in a junior or senior high school two years of one foreign language acceptable in satisfaction of the foreign language requirement for admission to the University of California, and one additional year of the same language with minimum grades of C in the third year.

(2) By completing in a junior or senior high school two years of each of two foreign languages acceptable in satisfaction of the foreign language requirement for admission to the University of California.

(3) By demonstrating equivalent knowledge through the C.E.E.B. Achievement Test, the Modern Language Association of America Test, or an examination administered

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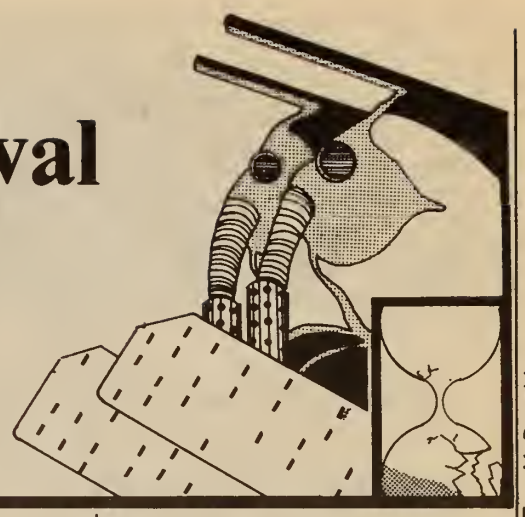
Teaching for survival in the 21st century



Tom McDonald

by Michael Locke

Science educators have created a successful system for professional training but have failed to respond to the more important challenge of science as a Liberal education essential for survival in the future.

Undergraduates entering university this fall will be in the prime of life at the beginning of the next century. Are we preparing them for it? There is nothing magical about the switch from 1999 to 2000: few of those now in positions of academic authority will live in either year, but if we are conscientious we should have thought about the conditions that the next generation will have to face. Lester Brown[1] points out the crucial role of education for the future. "Few problems facing mankind are as challenging as that of devising an educational system capable of responding to society's needs in the late twentieth century. If the quality of life for the majority of us is not to deteriorate, far reaching changes in human behavior must occur in the years immediately ahead. Education becomes crucially important as a means of informing people of the need for change and for stimulating acceptance of new attitudes."

For universities, the crisis years of the 1960s passed by without a resolution of the problems that gave rise to them, chiefly, how a university education should be related to the future life of its graduates and how their lives may effect change in society. Students have reverted from militant disagreement about the purpose of a university education because they have been encouraged to believe that attendance will get them a job. This mis-representation has given us almost a decade's respite, we may even slough off the responsibility for another few years, but the problem remains as to why students should be encouraged to spend part of their lives with us as teachers. In past time, looking ahead was a responsibility accepted by politicians, but with the increasing rate of change they have been left further behind than the educated private citizens who have the time to view a broader perspective. Science educators, in particular, should be able to take a long term view. Are we doing so?

A little over a hundred years ago universities adapted to the need for a new kind of education which could include a knowledge of science as well as maths and classics. Future clergy were no longer the majority of serious students. The result was training for an elite of professionals, men of science and medicine, teachers and engineers, for whom the classical education of the time was unsuitable, however good a preparation it may have been for the demanding tasks of administration and management. Our thinking has been increasingly dominated by the success of the degree system which was generated then, the training of specialists as advisors to run research programs and departments. We have fulfilled that function well, but it is no longer the major need of society. However well honours science programs may create professionals out of the few who attend them, they now have a minor role in society, educating neither the elite who run the country nor the greater number of citizens who should control decisions through their democratic vote. The last two decades have presented universities with a new challenge, a mass of students, a tenfold increase in proportion to the population, over that a hundred years ago. Science departments have responded by mastering the logistics of teaching large numbers, creating an effective series of hurdles to select those suitable for professional careers. In doing so they failed to realize the nature of the challenge. The challenge was to ensure that all future members of the establishment be exposed to science as an education for the mind and that the future electorate be taught to feel at home with science as an essential element of their culture.

The need for science as an education of the mind for members of a future establishment

The teaching of science for the professions has never been at a higher level and yet G.M. Edelman [2] can say "In no age of Western history has a philosophical procedure been so tacitly accepted and used without understanding as has science by modern governments. I believe this is so because the people who govern are no longer in a sensible position to make wise decisions based on the advice of a Mandarin bureaucracy of scientific specialists. Our legislators are in that predicament because their present education and legal discipline simply exclude any understanding of the procedures and disciplines of scientific research." The reason, as Sir Hermann Bondi [3] has pointed out, lies in a fault in our science education. "It ill becomes scientists to deplore the fact that so few of them are in parliament, the upper reaches of the civil service, the banks, the highest positions in industry. For have science courses been aimed to produce such people?"

Politics, the legal system and science are moving rapidly away from one another because their adherents are skilled professionals rather than educated citizens. We live in a society that is based on science and technology and yet we have an elite of accountants and lawyers running it without understanding. Although for its own safety our culture requires a knowledge of science on the part of all its members, our past teaching of science has had little influence upon policy making by the establishment. Politicians influenced by the short term vision of the next election, and whose education and legal discipline exclude an understanding of science, cannot be depended upon to make good long term decisions about highly complex technological matters. For example, it is nonsensical for government fishery departments to stock lakes and rivers with trout and salmon but then have to warn fishermen that they are unsafe to eat, and it is absurd that while biologists spend their lives trying to understand, prevent and cure cancer, another segment of society profitably produces oncogenic substances and permeates the environment with them. We cannot except that even such obviously dangerous practices will be abandoned unless the leaders of society have been educated to look further ahead to understand the consequences of their actions. The dominant forces in politics will only recognize the necessity for a new cooperation between science and society for the benefit of all if we do a better job of educating the politicians of the future.

The future citizen of culture must feel at home with Science

In the last century the rise of science went hand in hand with the recognition of its importance in universal education. Karl Pearson [4] for example, said "The importance of a just appreciation of scientific method is so great, that I think the state may be reasonably called upon to place instruction in pure science within the reach of all its citizens... it ought to be one of the best training grounds for citizenship." T.H. Huxley tried to prevent there being any such thing as a layman in Science. In his essay [5] entitled "We are all Scientists" he said "The method of scientific investigation is nothing but the expression of the necessary mode of working of the human mind." These attempts at education contrast with more recent exhortations to inform the public of the need for science as funding for research has become less generous. Scientists were urged to go out into the community and to let citizens know who they are and what they do. The effect has often been the reverse of that desired, causing the public to view scientists as different, perhaps not to be trusted, confirming their feeling of being shut out of "science's ecclesiastical courts" and the need for public participation in the role of watch dog. The attitude that scientists are different is perpetuated by politicians who would like science to become a constituency with no greater unity than other professional groups and lobbies [6]. How refreshing it is to find Huxley telling his audiences that they are all scientists, that they all take their day to day decisions in the same way as scientists. This should surely be the base for a liberal science education. Modern science has been generated by individual creativity, originality and imagination of a most exciting kind, but the thought processes do not differ in principle from those that we all use. If we conceive of science as a group of subjects offering an education in thinking, communication and the evolution of human ideas, then it will provide an unsurpassed education and a cultured and scientifically informed electorate capable of surviving in the twenty first century.

It is the purpose of this essay to suggest that science educators have so concentrated on professional training that they have neglected to look ahead for the majority of students, and in so doing have missed a responsibility to use their immense power to shape the future. It is foolish to suppose that students will become well informed citizens on the present diet of elementary courses designed as factual introductions to the scientific priesthood. The continued increase in the rate of change to everything about us creates a need for education to become a lifelong process. Graduation no longer prepares someone for a lifetime's work. The focus of education must now be more upon how to adapt, how to predict and keep up with change. Facts have less relevance, they change in importance or even cease to be facts in the light of further discoveries. As A.N. Whitehead said, "Knowledge keeps little better than fish." Those who say that the bare bones of science, the basic facts, are equally appropriate for training in honours science and for a popular education betray the bias of their origin. Students do not get an education as "also rans" picking over courses on the periphery of professional training.

It is also my purpose to suggest that a program in liberal science is a most appropriate general education and will be an essential prerequisite for professional training in business and law. Liberal Science can be a worthy successor to the American tradition of Liberal Arts that until now has been the main bastion stemming the uncontrolled spread of professionalism.

In the discussion which follows I have introduced fifteen areas of study appropriate for a three year liberal education aimed at preparing students for life in the future. The objective is survival in the 21st century. It can be called liberal science or just liberal studies since the cultured man of the future must have a background in science. The science component should be an education of the mind

rather than a professional training. It may result in students knowing fewer facts but they should know more about the kingdom of scientific ideas, about how to argue, how to evaluate the experimental basis for facts, how theories are supported and how to reconcile the wishful thinking of social and business ethics with inescapable factual limitations. Such an orientation may even produce better scientists.

1. Language, communication and logic

The misuse of language threatens all teaching objectives. More than thirty years ago George Orwell[7] wrote "Most people who bother with the matter at all would admit that the English language is in a bad way, but it is generally assumed that we cannot by conscious action do anything about it."

Contemporary English does not consist of picking out words for the sake of their meaning and inventing images in order to make that meaning clearer. It consists of sticking together strips of long imprecise words which have already been set in order by someone else. The result is a string of fattened ready made all-purpose phrases, vague, slovenly or even dishonest in their attempt to convey information. George Orwell, concerned then about the political implications of the decline of language as a means of communication and its effect upon clarity of thought, would be appalled at our present state.[8] In his time it was primarily political propagandists who sought to confuse meaning and mislead their audience, but they were tyros compared to the present day advertising executives employing psychologists, language experts and lawyers. There is now a clear double standard in the purpose of communicating which may be used either to convey meaning or to influence decisions irrespective of facts. A reader cannot distinguish the word of a verbal con-man from the word used with thought and care by a writer of impeccable ethical standards. The difference is well seen if we compare scientific with mass media publications. The objective of scientific publication is to provide readers with information relevant to their scholarly discipline. The objective of a commercial publication is to make a profit. The content of a scientific journal or textbook must meet the exacting intellectual standards of its readers and editors with respect to objectivity and repeatability or truth. The content of a commercial publication is determined by advertisers and staff, who within certain bounds of good taste, judge success by profit. How can we expect language to survive as a means of communication when the main objective of rich and powerful forces is to influence rather than to try to tell the truth? How can we expect students to think and express their own thoughts when the words they are exposed to are put together with such a different objective? In the face of massively financed misuse of words it is not surprising that the performance of students in objective verbal tests has declined markedly in the last few years. If we do nothing to counteract this trend, then the most that we can hope for is that an elite may become bilingual, relegating everyday language to the role of background music lacking both precision and beauty.

Orwell goes on to say that the decline is reversible. If educators are to have any success at all it has to be reversed. Language has survived and evolved because it has been successful in transmitting information from one human being to another and because it enabled people to think more clearly. For the first time in history major forces of society are changing language to make it less efficient for these purposes so that words lose their value. Those for whom words have lost their value are likely to find that ideas are harder to come by. Misuse of language threatens all our teaching objectives. Whether we are teaching science to honours students or for cultural background, precisely used words are the tools of thought. What self respecting workman would allow damage to his tools and then carry on working with them just because those around him used damaged tools to perform shoddy jobs? He would surely redouble his efforts to keep them in shape — as we must do if we are to prevent the thinking of students from becoming crippled.

Fortunately, we are not weaponless in the fight to improve expression. English is a beautiful instrument for conveying information if accuracy, precision, relevance and brevity are married to forceful and striking imagery. There is pleasure in hearing words used skillfully and a satisfaction in using words properly. The correct use of English is rewarding in its own right. We must insist upon literacy wherever we have jurisdiction and in particular we must insist that it be the first element in a university education. Students cannot begin their education without an understanding of the value of language as a means of communication and its relation to logic.

2. An introduction to numeracy, the mathematical base for science, business and economics

Some of the forces that have debased language have also tried to reduce the meaning and value of numbers in communication, but the self-evident need for precision in numbers only allows a superficial distortion. The teaching and understanding of maths in schools have also probably declined less than the teaching of English. There is, nevertheless, a need to stress the value of numeracy as a base for thinking and logic. Statistics, in particular, is essential in modern business and economics as well as for an understanding of science and technology. If those in the law and politics know something of probability they might accept numerical answers with degrees of likelihood instead of demanding one armed scientists to take their decisions.

3. Human Biology, what the body needs to survive

An integrated understanding of ones own biology should be part of everyone's education for citizenship. In particular, human physiology is the science with most immediate personal relevance and interest and should surely be part of the background of more than future doctors and nurses. And yet it is among the most neglected subjects in general education, perhaps because of the high degree of professionalism of medical schools which restrict their teaching to the specialists intended for careers in medical research or practice. Medical schools jealously guard the right to teach human biology, confusing the qualifications legally required for the practice of medicine with those needed to understand and teach the science. Few outsiders dare to develop an expertise in human biology, much less teach it. The result is a medical elite who profess to have no time to teach the general student[9] and a public woefully ignorant of the facts that are personally most important to them. Medicine, even more than other professions, is protected by a powerful union which enfolds its subject matter in mystery. Unlike other professions the subject matter is you and I. How we live and die should not be such a well kept secret.

4. The foundations of economics

The concept of Gross National Product (GNP), the basic tool for economic analysis, began in 1945. By 1950 Leontief introduced his input-output tables which can provide a planning grid for an entire economy-for which he received the Nobel Prize. There is now a common world wide foundation of technical economics, an increasingly esoteric technology understood by few, that is inextricably bound up with public policy and decision making. Economists are protected by the mystery of their subject even more than medical practitioners, allowing the workings of the economy to be the scapegoat for the failure of social programs and the excuse for political inactivity. For their future protection, should we not ensure that all university graduates have some understanding of economic principles, particularly now that economic expansion, that central pillar of support for optimistic Marxists and managerialists (but not Maoists), must be replaced by a steady state?

5. The physical sciences in modern life

The most obvious and widely applied human success lies in the understanding and control of the forces of physical nature. It may be that the biggest problem for society now is how to evaluate this success and to assimilate it into the social fabric without being wrecked in the process. The evaluation is a technological problem not a philosophical one as Polanyi has pointed out.[10] He took Prime Minister Trudeau to task for the content of his address at the dedication of the tallest free standing structure in the world, the CN Tower in Toronto. Trudeau said that the essential problems today are philosophical: how one can safely use scientific advances. Polanyi pointed out that there are good reasons why one would not get satisifactory answers from Solomon or Socrates about the safe use of nuclear energy. They would have no way of understanding the range of options since the questions are every bit as technical as philosophical. Intelligent political decisions about matters crucial for the future, increasingly require a conceptual background in the physical sciences — in this instance a knowledge of half lives and the nature of isotopes. The challenge to educators is to select and present the essential physics and chemistry that will be needed to understand such future decisions.

6. Human Behaviour, Ecology and Population Biology

If we were to examine the genetic composition of prehistoric man, living as we would now put it, as an animal, we should find little difference from ourselves and those around us. The time was not far distant in evolutionary terms, a mere hundred generations; indeed not even that, for the uniqueness of our present era lies in the coexistence of stone age societies with those capable of moon landings. When we compare the environments of ourselves and our ancestors they are vastly different. Because they are so different we tend to think that we too are different. We are not, nor can we expect any dramatic metamorphosis since evolution does not operate over such short time intervals. We survive in our present environment through our adaptability, particularly in behaviour, that evolved to cope with quite different problems. It would have been sensible to know our behaviour in the environment for which it evolved and what the limits of its adaptability might be, before matching it with a new life style. This we did not do and we are only now finding the limits imposed by previous evolution to the "far reaching changes in human behaviour" that are needed for successful adaptation to the present, let alone the future. If we are to evolve a society in which we, who are still genetically prehistoric men, can live, we need to begin with an education in our own behaviour, the ecological conditions under which it evolved and those which will allow us to survive.[11]

7. Computer Science

Computer Science began in 1946 with the Eniac. Never before has a new discovery taken hold and spread so quickly. By 1976 there were 8×10^5 data terminals in use in the United States. The post industrial society that is now developing is characterized by a knowledge theory of value in which processing takes the place of fabricating as the main occupation [12]. Telecommunications and computers are more important than steel, and writing and using a computer program has become accepted as a skill with applications in almost every endeavour. Computing, more than any other technological change, epitomizes the trend of modern technology to allow us to do everything faster. We may be impressed by the speed of modern transportation in which jet travel at 600 mph is 150 times faster than walking at 4 mph. Imagine then the impact of computers which can add 10^9 times as fast as the human brain. The revolution being brought about by computers is not merely in the rate at which we continue to do the things that we have been doing. Orthodox science has maintained in the past that the only scientific method worth the name involved quantitative measurement. Complex phenomena which could not be reduced to simple easily measured events were excluded or at best neglected. Complex problems came to be thought of as in principle insoluble rather than difficult to solve in the time available. The advent of computers has added problems with a new order of complexity to those that it is possible to attack in practice and science no longer relies upon single cause and single effect logic. The complexities of modern human problems — environmental, political, social and economic, require a knowledge of computers as part of any liberal education aimed at their solution.[13]

8. Nutrition

The study of nutrition is both intellectual and practical but few sciences have a greater gap between their obvious importance and a general awareness of principles of the discipline. Legislators do not know the effects of our national diet upon health and performance, at least in part because nutritionists are unable to advise them. [14] Businessmen may know the profit margins in food sales but not whether their product is safe to

eat, what its long term effects may be or even whether it is nutritious. Even at the personal level few people have any idea what they are eating, what they ought to eat or how it affects them. And yet an understanding of nutrition is of paramount importance at every level, personal — it affects our well being, social — groups eating together are still the base for family life and entertainment, national — food profoundly affects health, behaviour and performance, economic — food production, processing and distribution make up the largest industry, international — food may be the strongest weapon in the economic warfare of the future.

A consideration of nutrition exposes very clearly an example of a conflict typical of our time, one between the ethic controlling the way things are done and the common sense ethic related to the way things need to be done if the objective is human well being. The food producer aims to turn out storable products from high yielding easily transported crops that will sell because of their mouth — feel and taste[15]. The senses evolved to give us the best chance of an adequate nutrition when they were exposed to natural signals, not synthetics. The body still requires nutrients, however much the signals of synthetic flavours and additives may fool the senses. The human need to be nourished to survive, conflicts with the business ethic of producing food to sell by satisfying the senses.

The shift of the population from agriculture to food processing is one of the most significant economic changes this century.[16] Prior to the second world war about a quarter of the population of North America was on the land in agriculture compared to less than five percent now. The mass of people have shifted from the farm into food processing and distribution. Seventy-five percent of food now eaten in North America has been factory processed, 1800 chemicals are routinely added to food and several thousand more are used for special purposes. The past gives us reason enough for teaching nutrition in the wide sense as part of a liberal education, but prospects for the future make it imperative. Canada and the United States are among the few food exporting countries and currently produce most of the exportable food surplus taken up by the rest of the world. There may be no such surplus in the 21st century.

Nutrition taught holistically will draw agriculture, economics and food fabrication together with chemistry and physiology. It will consider the politics of hunger and how the psychology and sociology of eating influence the structure of society. Out of this may arise a concept of good nutrition as optimizing human physical and mental potential rather than just keeping out of hospital in the next century.

9. The foundations of modern law

The nature of a recent attempt to integrate science and the law shows the need for education. It was proposed to set up a science court to settle scientific problems in a legal manner,[17] as though there were common ground in the meaning of the word law. Non-scientists too often tend to think that the facts of science can be altered by pronouncement in press releases like the desirable characteristics of saleable products.[18] Pronouncements of a science court can carry no more weight than the research on which they are based. If the research is inadequate no court pronouncement can uncover the truth and make them more absolute. Laws of the land on the other hand are made and altered (or should be) for the benefit of the people subservient to them.

Lawyers are beset by many of the same problems that face the scientific community. Precedent is compelling in the law and laws once enacted are rarely repealed. The result is an inexorable tendency for growth of a more and more complex structure and a professionalism which sets lawyers apart from society. The law is then seen as a living for the initiated rather than as a protective system under which to live. Perhaps even more important for the future is the failure of the legal system to respond to rapid technological change. Those in the politicolegal system have had little exposure to science as is shown by decisions to allow desperate and gullible cancer patients to spend their savings upon laetrile, a drug banned by the F.D.A. as worthless. The decade and more which elapsed between the thalidomide and Minamata disasters and any legal judgments shows the extent of the failure of the law to protect people. It has failed to adapt to either the technicality or the massive scale of such immediate demons as carcinogens and teratogens let alone the more distant threats of radioactive isotopes and climatic change.

If the law is not to become increasingly irrelevant as a system to protect people, it is necessary that scientists should get to know more of its problems as well as ensuring future lawyers are educated in the principles of science.

10. Human interaction with the environment

There is no better example of the failure of current scientific education than the development of the attitude of the public and politicians to issues relating to our long term survival in the only environment available to us, that of the earth. The exponents of the science that should be our salvation have allowed themselves to be labelled as environmentalists, a mere lobby for the preservation of undeveloped countryside in opposition to progress, the generation of jobs and the reduction of poverty[19]. The issues are seen as progress for a better life style versus long haired support for some vague entity, the environment. The real issues affect the well being of everyone now alive[20] and are critical for the survival of those to come. As Barry Commoner says[21] "Never before in the history of this planet has its thin life-supporting surface been subjected to such diverse, novel and potent agents. The cumulative effects of these pollutants, their interactions and amplification, can be fatal to the complex fabric of the biosphere. And because man is a dependent part of this system, continued pollution... will eventually destroy the fitness of this planet for human life".

An objective for any liberal education must be a basic understanding of man's place in the earth's complex and threatened ecosystem. A student aspiring to be a citizen needs to know how he has fitted into this and how his society is altering it. Each technological advance has had an effect upon the environment equivalent to using it up. If he is to survive we need to teach how to evaluate the economic and social damage caused by innovation and how to balance this against its benefits.

11. Philosophy and Ethics

Philosophy lies somewhere between theology and science[22]. That which is in principle verifiable, all definite knowledge, belongs to science. That which is based on dogma belongs to theology. Speculations upon matters so far unascertainable but appealing to reason rather than authority are in the no mans land of philosophy. If we have taught our science well, the enquiring student will want to know its logical basis and will wish for answers to questions not answerable by science alone, such as, "Are there really laws of nature or are they the result of our mental ordering of questions and answers? Is there purpose in the universe? Is there a noble way of living and in what sense is it preferable to others?" Attempts to answer such questions clarify the role of science and lead us to the need for an ethic, a code which if followed would allow us to survive in a manner that we could predict and choose.

A knowledge of science and engineering coupled with applied rationality in economies, politics and the law allow us to predict and control the future to an ever increasing extent. The first step in our liberal education will be to face the predictions of events already entrained. But to what end is the response that can result in control of the future? Planning for control requires more than science, it requires value judgements backed by an ethic. The late E.F. Shumacher said, "Science and engineering produce 'know-how'; but 'know-how' is nothing by itself; it is a means without an end, a mere potentiality, an unfinished sentence. 'Know-how' is no more a culture than a piano is music. Can education help us to finish the sentence, to turn the potentiality into a reality to the benefit of man? To do so, the task of education would be, first and foremost, the transmission of ideas of value, of what to do with our lives."[23]

It may be that science will have no role to play in the creation of an appropriate ethic. For example, Daniel Bell says, "Yet it is not at all clear that science, as a "republic of virtue", has the power to provide a new ethos for the society; more likely it is science itself that may become subverted. What this means is that the society is left with no transcendent ethos to provide some appropriate sense of purpose, no anchorages that can provide stable meanings for people."[24]

I believe, on the contrary, that a study of human evolution can provide the needed ethic. Ultimately, survival is the only thing that counts and values must be weighed against the often competing demands of survival for the individual, the population and the species. It will be a curious twist of irony if Darwin, abhorred in his day for lowering man to the level of beast, should find his philosophy the cornerstone of an ethic leading to the survival of his species. If science is to be an education, more than an intellectual pasttime, students need philosophy. If they are to survive in a culture of their choice they need the ethics that can only be generated by an interaction between science and philosophy.

12. World resources, energy and food.

Throughout human history agriculture has evolved in balance with energy resources, limiting traditional agriculture and population essentially through the supply of solar energy. The development of technology for mobilizing non renewable fossil fuel has upset this balance for part of the world by increasing yields, in effect substituting energy for land.[25] North American agriculture now uses about six calories of fossil fuel for every calorie of food produced[26] and the annual human use of energy has reached about one tenth of that in all global photosynthesis. Meanwhile, the food needs of the rest of the world have outstripped the supply obtainable through their traditional solar powered agriculture. Fossil energy and other non renewable resources must soon become too scarce to sustain an economy built upon their abundance.[27] For example, Christiansen & Clark[28] say "Sooner or later... (we) must accept the concept of limits to growth in a finite world. To do otherwise is to rely upon a latter day version of the alchemist's dream... We find no evidence in major documents... or the utterances of... national leaders that these matters have been considered." One of the first models of the world situation[29] projected rapid depletion of resources, increased pollution and economic depression by the beginning of the 21st century. More optimistic models all require immediate corrections to reduce population and pollution and to increase recycling and the efficiency of agriculture. An economic revolution from a growth to a no growth economy is needed.[30] A calamity free balance between energy and food means that the goal must be a solar powered world with a renewal economy. If our students are to have any chance of achieving this goal then our teaching must reflect the importance of the problem.

13. Genetics and human evolution

About twenty years ago Sir Peter Medawar[31] drew attention to a problem that most of us prefer not to think about. Where is the human species going? He said "It is extremely difficult to think of any

social habit or act of legislation that has no genetic consequences. Penal, fiscal, social, moral, medical, political, or educational laws, schemes, treatments, habits or observances will all make some mark on our genetic structure. Advances in the application of medicine have changed the entire pattern of the forces of mortality". We like to think that we know where we are going, that we have some say in whatever evolution is taking place. Manifestly we do not. Darwin began one of the three major revolutions in thinking in biology (the others being Mendelian genetics and the molecular revolution of the 1950s). His concept of evolution from the struggle for existence and the survival of the fittest is rather easy to understand and was vehemently argued by layman and scientist alike. And yet no major theory of science is now so firmly disregarded in its consequences for human beings. One might hope that man's interest might extend from his personal adequacy as a representative of a reasonably successful and well adapted species to predicting the design needed by his successors and planning for their continuance as successful meaningful organisms. Without some plan to allow differential genetic contributions to future generations the future species will be a mess. Most of us are alive today due to the miracles of modern medicine and technology. It is a piece of personal egotism of the first order for any of us to suppose that just because we have the good fortune to be alive, we are entitled to make a genetic contribution appropriate for future generations. It should surely be part of any challenging liberal education to know the genetics of our species and to understand the implications of our other actions upon the future of the species.

14. Land, Land use, Climate

The land is unquestionably the greatest material resource. In the past the fate of local civilizations has depended upon the state of the topsoil; the way it was treated and the way that it carried vegetation determined their survival[32]. Now that changes in the land surface are on such a large scale that they effect world climate, it is even more important that we understand our relation to it. We must recognize that our survival depends upon coming to terms with the land, using it in a dynamic way only in so far as it can be a renewable resource. The way that land is now used presents us with the same dichotomy as does nutrition. For long term survival our objective must be the well being of the land, it must be nurtured, kept alive. The farmer on the other hand (or any other cropper such as the forest industry) is expected to be a producer who will cut his costs and raise his efficiency by every possible device to supply us now, even if he ruins the soil in the longer run. The only way out of this destructive race is through education and a greater awareness of the science of land use to enable us to face up to the moral imperative requiring a balance between present and future cost. The land and the living things on it must become more than factors of production. There are encouraging signs that many of today's youth understand this better than some of those in authority. There is a grass roots hunger for information and concern for the future of land that deserves a science educator's interest.

15. International relations, modern politics and world history

Long before they are starved of food and energy, poisoned by pollution or smothered in excess bodies, our students are likely to experience a series of international political confrontations that can only be resolved by war or with the imposition of harsh restrictions by the nations that have power through the possession of resources. They may also experience equally disastrous national confrontations. In the short run of the next few decades, their fate depends upon predicting these confrontations and in being ready to handle those that are inevitable. The education required for this lies in much that has been introduced so far, particularly in human behaviour and in the management of world resources. But more is needed in social anthropology to allow an understanding of the motivation behind political crises, and in political science for knowledge of the ways that political systems must change to match the complexity of post industrial society. We may not be quite as optimistic as Fred Hoyle[33] who says, "Should man give his brain over to a serious study of human relations, as he now studies the arts and sciences, there is no reason why the threat to his dominance on the Earth should not be met with entire success", but without an understanding of human relations our students have little chance.

Conclusion

Murray Ross[34] gives a profile of the many purposes attributed to universities in their history, all being aspects of past truth, but nowhere is there the urgency that I feel appropriate for the present. This essay is based on the premises that the survival of our students is by no means certain[35] but that their chances can be improved if we do something about their education. The purpose should be to educate for survival, for themselves, for their national group and for humanity, and to arrest the trend of universities to become service stations for an ever-increasing number of jobs and professions. The educational resource of most value for the future is not professional training but an education in science for citizenship and leadership. In his introduction to *Civilization and Science* Hubert Bloch writes,[36] "It is the task of the universities not to foster specialization but to resist it, to train their science students in such a way as to prevent them from becoming assembly-line workers. Every single teaching subject can be put into its broader context, even at the expense of specialization. This would have the added beneficial effect that the professors would be forced to think about and answer questions relating to the wider significance of their own endeavours."

Although the future risks for our students are high, there are some signs of hope. In the first place, we are entering a post industrial society where knowledge is the major resource and where scientists and researchers should have more influence than generals and businessmen. Secondly, science is above all a cooperative enterprise, a social activity that is perhaps more successful than any others in enabling diverse people to work together. Thirdly, science is universal and is needed by all countries. Its expansion brings nations and cultures together. As Lester Brown points out,[37] countries can no longer be completely independent. "The rich countries... can assure their own national destinies up to a point, but no nation is secure unto itself in today's increasingly interdependent world. Security can come only within the framework of an informed and unified global society". An education in liberal science might just bring about this. It would be at least a response to the challenge of post industrial society. As knowledge becomes the major resource we must ensure that the right sort of knowledge is distributed where it is most needed.

Year 1

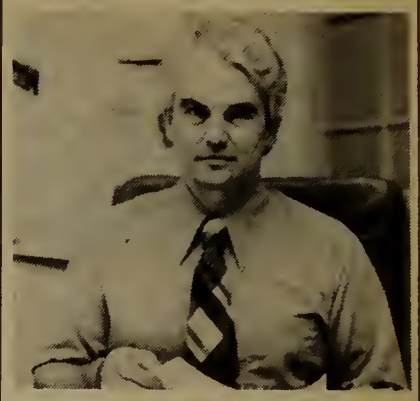
1. Language, communication and logic.
2. An introduction to numeracy, the mathematical bases for science, business and economics.
3. Human Biology, what the body needs to survive.
4. The foundations of economics.
5. The physical sciences in modern life.

Year 2

6. Human behaviour, ecology and population biology.
7. Computer Science.
8. Nutrition
9. The foundations of modern law.
10. Human interaction with the environment.

Year 3

11. Philosophy and Ethics.
12. World resources, energy and food
13. Genetics and human evolution.
14. Land, Land use, Climate.
15. International relations, modern politics and world history.



Michael Locke

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Footnotes

1. L.R. Brown, World without Borders, Random House, New York, p. 113 (1972).
2. G.M. Edelman, Beyond Tomorrow (Rockefeller University), p. 5 (1976).
3. Sir Hermann Bondi, (1976), Nature.
4. K. Pearson, The Grammar of Science, p. 11-12 (1892), J.M. Denton & Sons, London.
5. T.H. Huxley, We Are All Scientists, From Darwiniana, D. Appleton-Century Company Inc. (1863).
6. Some politicians would even like to isolate the educated as a separate minority constituency. Premier W. Davis of Ontario said that "too much emphasis has been placed on the need for a college education... Ontario has far too many young people who are well educated..." Reported in the Toronto Globe and Mail, September 21st, 1977.
7. George Orwell, Politics and the English Language in Selected Essays (Penguin Books), p. 143 (1946).
8. More recently Michener has pointed out the political implications of the destruction of language. "Numerous committed revolutionaries have preached that the debasement of language is one of the most powerful agencies for the destruction of society. They argue if you destroy the word, you can destroy the system..." J.A. Michener, Kent State, p. 224 (1971) Fawcett Crest Books,

   One should not underestimate the strength of the challenge to an objective use of language which comes from new cultural ideologies. D. Yankelovich, (The New Naturalism, Saturday Review April 1, p. 35 (1972) quoted in M.G. Ross, The University, the Anatomy of Academe, (McGraw Hill) p. 124 (1976)) describes the tenets of the cultural revolt. "To devalue detachment, objectivity and non involvement as methods for finding the truth... to express oneself non verbally; to avoid literary forms of expression... to rely on exclamation as well as silences, vibrations and other non verbal modes of communication".
   In the other direction the debasement of language by the establishment for political reasons is equally threatening. L.M. Reiser gives the following examples in his Presidential address to the AAAS entitled the role of Science in the Orwellian Decade (Science 1974, 184, 480-489). Instructions went to all United States Government agencies to eliminate the word "poverty" from official documents and to replace it with "low income." The Pentagon coined the phrase "protective reaction strike". The Whitehouse declared "inoperative" all previous Presidential statements on Watergate.
9. A notable exception was Albert Damon who had a Ph.D. in biological anthropology and an M.D. from Harvard. He believed strongly that there are numerous careers in human biology in addition to medicine. While at Harvard he developed a course in human biology for general students, published posthumously as a book, Human Biology and Ecology (W.W. Norton & Co.) 1977.
10. J.C. Polanyi in an address to McMaster University Convocation reported in the Toronto Globe and Mail, May 1977.
11. For such an education I do not mean Psych 1. Introductory psychology is usually second only to sociology in drowning clarity of thought and students in jargon.
12. D. Bell, The Coming of Post-Industrial Society (Basic Books Inc.) p. xv 1976. "In 1946, the first digital computer, the Eniac, was completed at the government proving grounds in Aberdeen, Maryland, and it was soon followed by the Maniac, the Johnniac, and within a decade, ten thousand more. Never in the history of invention has a new discovery taken hold so

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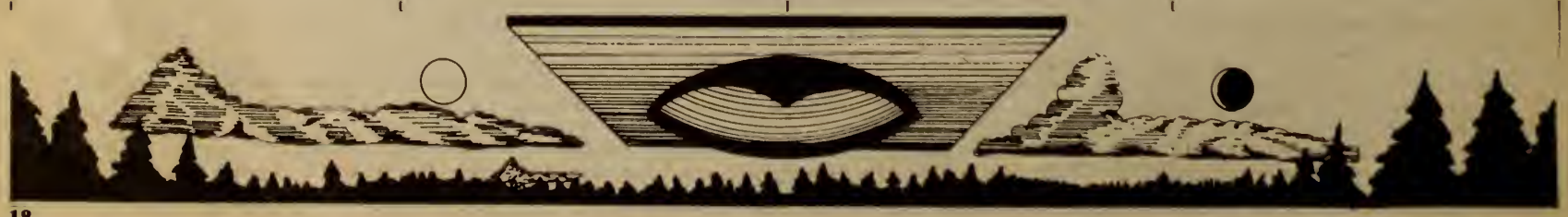

CAUT brief on obscenity and pornography

"How about the Venus de Milo?"

CAUT prepared the following brief for presentation to the House of Commons Standing Committee on Justice and Legal Affairs.

It is incumbent on those who wish to change the law to demonstrate the need to do so. During the last few months, changes have been advocated in the existing obscenity legislation involving both adults and minors. CAUT does not believe that the advocates of change have proved the need for fundamental revision of the definition of obscenity but it does believe that changes in the law should be introduced to restrict the public display of sexually explicit materials and to prevent their sale to minors. It also believes that the law should be amended to deal with the procuring of children to perform sexual acts, notably but not exclusively for photographic reproduction. Those who advocate changes must also demonstrate that the changes they desire will not curtail the freedom of adult Canadians nor impede cultural, literary, theatrical or artistic development in this country. CAUT considers that many of the proposals for change, including Bill C-21 (formerly C-51), could seriously impair the artistic, literary, and cultural life in this country. CAUT recommends to the Minister of Justice that Bill C-21 not be passed in its present form.

Adults and obscene materials

The implicit or explicit rationale for those who wish to change the law is that sexually explicit literature has a harmful impact on the adult individuals who read it or see it and can impel them to commit illegal acts. Yet the United States Commission on Obscenity and Pornography, 1970-71, despite extensive research, could find no scientific justification for this point of view. Similar findings occurred in the 1966 report of the government of Denmark. Since the most recent proposals to change the law emanated from the House of Commons Standing Committee on Justice and Legal Affairs, we would have expected extensive research to be undertaken to test the American and Danish findings in the Canadian context. No such research was undertaken. CAUT urges Parliament to fund such research before it takes action to change the law.

Researchers such as Professor Berl Kutchinsky argue that sexually explicit literature provides an outlet or safety release for individuals who might other-wise commit illegal acts[2]. It should be noted that no scientific proof exists of this position either. But in the absence of scientific and dispassionate evidence of the impact of sexually explicit materials, CAUT considers that it would be unwise to make any fundamental changes in the legislation based on unproved assumptions.

Another reason offered for the restriction of sexually explicit materials is that their circulation symbolizes a breakdown in traditional morality and family relationships. But there are difficult distinctions between the breakdown of traditional values and legitimate change. Furthermore, there is little evidence to prove that sexually explicit material will lead to social chaos or revolution. The breakdown of the economic system seems more likely to do this. Furthermore, the criminal law should not be used to try to enforce a return to older moralities. This is the role of the family, and organized religion. The state should limit its involvement in such areas.

Another reason offered is that pornography is by definition exploitive of women. This ignores the fact that much of it is exploitive of males also. However, the Standing Committee reported:

> "A close examination of this development has revealed the emergence of a number of unhealthy social tendencies which are unacceptable to the vast majority of Canadians. This material is exploitive of women — they are portrayed as passive victims who derive limitless pleasure from inflicted pain, and from subjugation to acts of violence, humiliation, and degradation. Women are depicted as sexual objects whose only redeeming features are their genital and erotic zones which are prominently displayed in minute detail."[3]

The Advisory Council on the Status of Women replied:

> "The inequality of women, the existence of violence, and the expression of horror and cruelty will not be solved by suppressing their depiction. They will be solved by other less superficial measures such as education, equitable social programmes, and control of gun sales. If we follow the argument (as adopted by the Parliamentary Committee on Justice in its recent report on obscenity) that the portrayal of women in pornography degrades women, and that this justifies censorship, we should also be ready to legally restrict the publication and distribution of the vast majority of elementary school textbooks which also depict sexual victimization and inequality and thereby also degrade women. The real problem is not the depiction of women in pornography but the fact that women are not accorded equal economic, social, and legal status in our society."[4]

CAUT agrees with the Advisory Council that it would be more practical and direct to establish women's rights through equal rights legislation and amendments to the employment standards legislation.

There is also concern about the link between organized crime and the sale of sexually explicit materials. The evidence certainly seems to suggest that this is likely. But is it clear that restrictive legislation will change this? Surely it will merely assist organized criminals by allowing them to charge higher prices and to simplify the monopolization of the business which can no more be driven out of existence than the much more destructive liquor trade. For instance,

Mrs. Holt (L-Vancouver) made it clear to the Parliamentary Committee that she would ban *Penthouse* in Canada. Since *Penthouse* imports 700,000 copies into Canada, it is obvious that the potential for highly profitable smuggling and illicit sales would be very great. In fact already when *Penthouse* is banned in Mississauga or Montreal, the price goes up in other parts of the country. Finally, it is suggested that the Minister of Justice should respond to the demands of vocal groups who wish to restrict the fundamental freedoms of Canadians in particular ways because this is a necessity of politics. Yet, the Minister of Justice is specifically enjoined in section 3 of the Bill of Rights to defend those fundamental freedoms by reviewing every Bill "...in order to ascertain whether any of the provisions there of are inconsistent with the purposes and provisions of this Part...". Those rights include freedom of speech and freedom of the press. In other words the Minister of Justice has an obligation to defend our fundamental rights and should not, therefore, passively acquiesce in attacks on these freedoms.

It is curious to find adults who actually seek out sexually explicit material, acquire it and then are sufficiently shocked to demand that it be banned. There is a simpler remedy. They need not buy these particular books or magazines or go to those particular movies. As the Law Reform Commission said, "Is it sufficient justification for invoking the criminal law to protect citizens

from being shocked and revolted by what they have voluntarily chosen to read or view?" The CAUT does not think so.

But there is a problem concerning the public display of sexually explicit materials. Some citizens regard this as an unwarranted intrusion on their privacy. This seems to the CAUT to be a legitimate complaint. We thus agree with the Law Reform Commission that the nuisance laws should be so amended to restrict the visual display and sale of sexually explicit materials both by prohibiting such advertising and by restricting sale to adult book shops and the like whose materials can only be displayed within the store.

The above arguments could, of course, be used to advocate the complete abolition of the existing obscenity laws and their replacement by nuisance legislation. Even though some CAUT members would support this, CAUT does not recommend this course of action. The existing laws may be somewhat irrational as is the application of most obscenity laws. But there is now a substantial body of judicial precedent to define obscenity in ways that should not prevent the production and circulation of artistic, literary and dramatic productions although there will no doubt be difficulties on the fringes of the law.

Nor should it be forgotten that most hard-core pornography is currently illegal and for that reason is distributed underneath the counter. The Parliamentary Committee was particularly moved to action by the travelling pornography show of the Ontario and Toronto police. Yet as the chairman of the committee remarked: "But it seems to me that when you tell us that a lot of this stuff is distributed

under the counter this is a problem which does not have any relevance to the question of the definition of the law. This is purely a problem of enforcement." [5]

There is another problem that should be addressed by any new legislation. One of the peculiarities of obscenity legislation is that it promotes the vigilante squad — that peculiarly odious method by which some citizens try to tell other citizens what they may read or see. Legislation should restrict this tendency. CAUT sees no reason why the taxpayer should pay for attacks on *Romeo and Juliet, One Day in the Life of Ivan Denisovitch,* or *The Diviners.* And the taxpayers do pay because they must maintain the criminal justice system to investigate, charge, adjudicate and dispose of such cases. Thus any legislation should restrict the right to lay charges to the provincial attorneys-general only. The attorney-general can then answer to the legislature for his use of the taxpayers' money to attack Shakespeare or Margaret Laurence.

Children and obscene material

The CAUT considers that there is also a problem to be addressed concerning the procuring of children to commit sexual acts for the purposes of photographic reproduction and sale. We agree with the principles involved in the amendments (166 and 166.1) proposed by the government in Bill C-21, namely that it would be a criminal offence to undertake such procuring.

In addition, we believe that the sale of sexually explicit materials should be forbidden to minors and that this should be part of the nuisance regulations referred to above.

Changes in the definition of obscenity

The Parliamentary Committee and Bill C-21 would change the definition of obscenity to include as separate offences the undue exploitation of violence, crime, horror or the undue degradation of the human person. At first glance this may seem reasonable since everyone is opposed to violence, degradation, crime and horror, and furthermore many liberals have argued for years that sexuality is not obscene but violence, horror and degradation are.

The difficulty arises first with the vagueness of these terms. No legal precision is offered. Thus there will undoubtedly be set in motion a generation of legal wrangling to try to determine what these words mean. It is hard to see how this will assist anyone but the lawyers involved. Furthermore, vague terms such as these can be used to justify prosecutions far beyond those intended by the authors of the bill. A great deal of literature from the ancient Greeks onward has as themes violence, horror and degradation. One only has to think of Oedipus Rex or of Titus Andronicus or indeed of many of Shakespeare's contemporaries or William Burroughs or of any novelists or dramatists who have used war as a basic theme. Not only would the definition place these works in jeopardy, it would also have a chilling effect on booksellers and publishers in Canada who may well decide that discretion is the better part of valour and refuse to print, to sell or to distribute such books in order to avoid harassment. Nor is the possibility of harassment fanciful since it is fairly clear that some of those who wish to change the law are as much upset about reputable authors as they are about photographic hard-core pornography. Similar problems will arise for paintings, sculpture and works of art generally. Will Nicholas Poussin's painting, the Rape of the Sabine Women, be illegal in Canada?

It is argued that section 159 which allows a defence of the public good will take care of this situation. CAUT does not think so. First of all it reverses the normal onus and makes the author and publisher guilty unless they can prove themselves innocent. The invitation to harassment is all too obvious. So is the likelihood of timorous self-censorship which could deprive Canadians of the classics of literature and art. Furthermore, the court must assume that the legislature meant to ban horror, violence and degradation because it said that is what it intended. Thus the court would have to have compelling reasons to override this. The rights of Canadians to access to the literature and arts of the world should not depend upon the vague phraseology of section 159. Canadians should have the right to read the world's literature and see its sculpture and paintings. Those who wish to prevent them from so reading should be required by the law to prove a case of obscenity, not the other way around.

But there is an even more substantial reason for objection to the suggested language. If crime, horror, violence and degradation exist, then surely the citizenry and the media should be agitating to end such situations. One legitimate way to do this is to show the horror and degradation explicitly to the people. Why after all did the Nazis hide the concentration camps as much as possible from the German people? Indeed, if the suggested legislation had been in effect in Germany in the 1930's, the Nazis could have prevented publication of stories or pictures not by brute force but by the pious invocation of the laws on obscenity and pornography. What would have happened in the United States to the television networks who showed night after night the horror and degradation of the war in Vietnam or the brutality and degradation practiced by the police of Selma? There would certainly have been complainants and local judges in the United States would have been glad to ban such programmes through the obscenity laws precisely because they saw that repeated showing of this type of degradation and horror would lead the people to support political changes. Nor would an appeal to section 159 have cut much ice because it would have been argued that far from it being in the national interest to show such pictures, it was in the national interest as defined by certain groups not to show such pictures. One could argue that ultimately the Supreme Court would have had the good sense to overturn such judgements. But by then the damage would have been done, and the reporting effectively stopped since stale news is not news.

Finally, it should be noted that these changes apply to the printed word. The partisans of change usually suggest that they only want to stop hard-core photographic pornography. But it is interesting to note that is not what is said in Bill C-21. The Bill sets out to ban all works including the printed word. "A matter or thing is obscene" are the actual words of the

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proposed legislation. It is, therefore, not unreasonable to expect that close behind the banners of hard-core photographic pornography which is already illegal are the book banners.

Another definition which is also objectionable because of its vagueness is the inclusion of a section trying to ban child pornography as a distinct category from obscenity in general. Again the act does not apply to photographic reproduction but to any book or work of art or text which unduly depicts a totally or partially nude child engaged in various sexual acts or "unduly displaying any portion of his or her body in a sexually suggestive manner". Presumably any text or any novel which frankly discussed the sexuality of teenagers would be banned in Canada since it can be presumed that most sexual intercourse takes place in a partially or totally nude state. Finally, after all these years the book banners would be able to get *The Catcher in the Rye*. And what will the courts make of "sexually suggestive"? Will they ban all the back issues of the National Geographic which seems to have had a prediliction for many years for photographs of nude Polynesian children and the like? Since most of the pressure groups regard any form of nudity as sexually suggestive, it is clear where they at least would think the duty of the courts should lie. Finally, the section defines a child not only as someone who is but who also appears to be sixteen or under. One does not have to have much imagination to see the confusion that would be created by the courts having to decide whether a subject in fiction, a painting or a photograph seemed to be sixteen years of age. One should not forget that this section applies to the written word as well as to hard-core photographs which are already illegal.

The demand for local option

There already exists a de facto system of local option in regard to obscenity in this country. It is clear that the police and prosecutors, no doubt reflecting the views of their communities and elected officials, apply different standards in different parts of the country as to when to prosecute or when to put pressure on local booksellers and distributors. Within reasonable bounds, this seems perfectly sensible. There is no reason why we should presume that the norms of all towns are the same.

The problem arises when attempts are made to enshrine this in the legal system. The Parliamentary Committee wished to remove the right of a defendent to a trial by judge alone and in certain circumstances to force jury trails where there could be no expert witnesses as to the standards of the community. Bill C-21 rejected the suggestion about expert witnesses but by increasing the penalties involved, allowed the attorneys-general to prevent trial by judge alone.[6] This is all part of an attempt to provide legal sanctions for a type of local option. At first glance this may seem reasonable. But why should a local jury be able to prevent the citizens of a part of Canada from reading the literature of the world or viewing reproductions of paintings and sculptures? Surely all Canadians have a right to read these materials and view these objects.

From the point of view of our members this is particularly significant in a university town. If there was an attack on the books on the literature courses or those kept in the library of a university in a particular Canadian town, should a local jury have the right to say that the faculty and students should not read those books or see the paintings or sculpture because they do not accord with the norms of the town? This would make the university the laughing stock of the western world. Surely there has to be some type of national standard.

Furthermore, this is not just a question of banning books in particular localities as many supporters of the legislation would like the public to believe. This legislation means that the publishers of a book could be summoned to trial in any small town in Canada and be sent to jail for ten years because someone in the town sold or displayed the material whether or not the publisher had anything to do with the display. This power would impose the values of Babbit on the whole country — a situation which has already begun to develop in Canada. No publisher could produce or distribute a book that was not acceptable in the most Victorian village in the country.

Thus CAUT is opposed to any legislation which would promote a system of legal local option and is particularly and emphatically opposed to any such system which would allow the imposition of extreme penalties in terms of fines or jail sentences on publishers or printers because some small locality in the country objected to the circulation of certain books or works of art. CAUT also recommends that defendents should continue to have the right to elect trial by a jury or by a judge alone.

Penalties

CAUT is strongly opposed to the Draconian penalties proposed under Bill C-21, namely up to ten years imprisonment and a fine of up to $100,000 or both. This is for breaking the law on obscenity, not for procuring children for the purposes of sexually explicit photography. One could hope that this would merely encourage juries not to convict. But it seems totally irrational to apply penalties for obscenity which are much more rigorous than those applied in manslaughter or other such serious criminal offences. This is particularly dangerous when it is clear that the parliamentary committee and others wish to rest this excessive power in juries at the local level who are empowered to enforce local standards.

The CAUT, therefore, recommends:

(1) That Parliament not adopt Bill C-21 in its present form.
(2) That any legislation on obscenity restrict the power to lay charges to the provincial attorneys-general only.
(3) That the definition of obscenity remain unchanged but that legislation be adopted so that nuisance laws could be put in force to prevent the public display of sexually explicit materials and the restriction of their sale to adult shops.
(4) That the criminal code be amended so that it explicitly states that the procuring of a child of sixteen or under for the performance of illicit sexual intercourse, particularly but not exclusively for photographic reproduction, should be illegal.
(5) That a local option enforced by criminal sanctions not be a part of any Canadian obscenity legislation.
(6) That any legislation refrain from Draconian penalties which are not related to the system of penalties to be found in other parts of the criminal code.
(7) That the accused in an obscenity case should continue to have the right to elect trial either by a jury or by a judge alone.

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CARLETON UNIVERSITY

OTTAWA, ONTARIO

SESSIONAL LECTURERS

SUMMER 1979

Subject to Budget approval the Department of Sociology and Anthropology, Carleton University, Ottawa, Ontario requires sessional lecturers to teach the following courses during the 1979 Summer Session. Applications should be forwarded to Dr. D.P. Forcese, Chairman, Sociology & Anthropology Department, Carleton University, Ottawa, K1S 5B6.
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$3010 per full course
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56.243 (Eve) - Religion and Society
53.254* (Day) - Urban Sociology
53.255* (Day) - Sociology of Deviance
53.270 (Eve) - Criminology
53.306 (Day) - Criminology
53.355 (Eve) - Contemporary Theoretical Sociology
53.373* (Eve) - Correctional Policy

University of Guelph

ONTARIO VETERINARY COLLEGE

DEAN

Applications and nominations are invited for the position of Dean of the Ontario Veterinary College, which will become vacant on December 31, 1979. The Ontario Veterinary College is the oldest college of veterinary medicine in Canada with a faculty complement of 105. The College is administered through the Dean with the assistance of two Associate Deans.

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Position subject to final budgetary approval.

INTERVIEW
Dr. René Simard

DR. René Simard is President of the Medical Research Council of Canada. A graduate of the Université de Montréal, Dr. Simard obtained his M.D. degree in 1962. Following three years' residency training in pathology at Hôpital Notre-Dame in Montreal and at Mount Sinai Medical School of New York, he spent 1965-68 as an MRC Fellow with Dr. Wilhelm Bernard of the Institut de recherches scientifiques sur le cancer at Villejuif, France. These studies culminated in the degree of D.Sc. from l'Université de Paris in 1968.

Returning to Canada in that year, he took up a position as Assistant Professor of Pathology at the Université de Montréal. A year later, he moved to the Department of Cellular Biology at the Université de Sherbrooke, of which he became full professor and chairman in 1974. Also in 1974 he was appointed an MRC Associate. In 1976, he became Scientific Director of the Institut du Cancer de Montréal, and Professor of Pathology at the Université de Montréal. Dr. Simard took up his appointment as the Head of MRC in June 1978.

Following is an interview with Dr. Simard conducted by John Cowan, Associate-Professor of Physiology at the University of Ottawa and Secretary of the Canadian Physiological Society. The interview first appeared in Canadian Federation News, the official newsletter of the Canadian Federation of Biological Societies.

* * *

CANADIAN FEDERATION NEWS — It must have been quite difficult to persuade you to leave an active research career to take on the presidency of the Medical Research Council. What were the factors which finally persuaded you to make the switch?

RENE SIMARD — It's a difficult question to answer. I think the present context in which science is funded was certainly one of the factors. I think other factors played a part as well, some of them personal, some of them related to my consultations with many people. Everyone was advising me to take the job, and said that I had no choice, that I didn't have the right to refuse in the present political and economic context: so I did accept it for these reasons.

CFN — That seems to hint at the notion that in your view it was important for us to end up with an independent scientist as the head of council if we were going to get the resources devoted to biomedical research that ought to be devoted to it.

SIMARD — Yes, and I think also that it was important that council be opened to new dimensions beyond its perspective not only in biomedical research which is the major thrust of council right now, but also into the health field and these are "ouvertures" which council has never taken in the past, mostly because the MRC Act did not permit it to do so.

CFN — So having been in the job for a very little while are you still confident that the current climate is such that you will be able to achieve these things during your term?

SIMARD — I think there is a possibility, but it will depend on the goodwill of several people who control the money which is given to the health field in general. I am encompassing in that monies distributed by National Health and Welfare for research into the Health Care Delivery System and the MRC itself. Those people are being approached at the present time, so it's too early to tell whether or not they will agree that we should have a single system of distributing funds for research in the medical field in its broad sense. It should also be remembered that all medical schools have reformed their orientation completely in the past ten years: they have more and more courses for medical students on the health care system and the economics of health in general as well as courses to explain to them what sort of system they're going to live in when they practice medicine. When you come to research, though, it is still the only sector in which there is a complete separation, for example, between basic research and the health field in general. So when people suggest that the MRC get a little more oriented towards research which will help Canadians in general, I think the MRC could only answer at one time, "Well, we aren't permitted to do health care system related research." The changes due to Bill C-26 now permit council to be involved in such things. Overall it will help to justify increased funding for the MRC.

CRN — Council as it stands is something which has not been altered in its function in some fairly long time, and its orientation has not changed very dramatically in some while. What kinds of changes over the next few years would you like to see in the way in which MRC handles its mandate? Do you see any fundamental changes in things like the use of the peer review system as it is currently constituted ?

SIMARD — In answer to the first question, objective number one is to get some kind of long-term funding for the MRC so that one can perhaps plan for priorities to be defined and perhaps also making sure that there are increased opportunities in medical research for young investigators, for whom the climate at present is quite obscure. As you know, they get trained and then can't find a job, since the number of open faculty positions in Canada is decreasing along with the number of students and funds, and so there are very few opportunities for young investigators to return to Canada to do research full time. I feel that if we had long-term planning with which we can calculate how many people a year we can take on research funding, that will help. That's priority number one.

Priority number two, for me at least, and I am not expressing council's view but rather my own, is broadening out into the health care system field to include treatment and readaptation, thus including chemical and technological fields and prevention of disease and promoting health care, and consequently epidemiology and operational types of research. If we can achieve that by unifying MRC and the research support programmes of Health and Welfare, I think we would have created a much more coherent system of funding of research in the medical field in toto.

These are my two priorities for the time being. I don't forsee any change in the peer review system. Everyone criticizes the peer review system but I've not seen any other system which could replace it. I think other councils have tried in the past a more or less "share the wealth" policy system — a little bit to everybody, and this too was severely criticised. For the time being at least I don't forsee any change in the peer review system, unless someone proposes a better one.

CFN — Rather than any fundamental changes, are you considering for example, adding committees in areas where committees may not exist? One recent suggestion, just as an example, was a nutrition committee, considering that it seems to be getting quite popular. Are you looking at possible changes of that sort?

SIMARD — That's a good suggestion. I feel that at present nutrition as a whole is covered primarily by Health and Welfare. That comes back to my previous point. There are very few projects as yet that touch on nutrition — it will be declared a priority, for example in the province of Quebec — I think our priorities at MRC have to be better defined. At the present time only one has been clearly defined, that is the Heart Research Development Grant. Still, I see that priority to be defined in too broad a sense; I think it could have been more specific, with problems identified within that priority. Other priorities will have to be defined. It's sure that nutrition could be one, because the target population as you know is enormous, and therefore it's a problem of major interest. With regard to having a committee on it at this time, I'm not even sure there are enough applicants to justify a separate committee. Most of the research projects of which I am aware in the nutrition field at present are more or less directed towards epidemiology and go to the other granting agencies.

CFN — A number of people believe that there is, for a variety of complex reasons, a morale problem amongst Canadian biomedical scientists, probably largely related to the unpredictability of their futures over the past few years. Do you have anything which you would like to communicate directly to scientists which might mark an end to that feeling, which might in fact be particularly encouraging.

SIMARD — I think that if the long-term funding plan is approved by the government and well accepted by the scientific community as a whole, everybody will know exactly where we stand for the next five years. But what we are asking is not 100% commitment by the government for the entire figure. I don't think one government can do that. But I think we would like to see some kind of moral commitment for support of research over a "five year plan" so that we know exactly where we stand within that context on a long-term basis. I think this would restore the morale of the scientific community. Only after such a plan is accepted can we properly discuss strategic approaches and identify priorities well in advance, so that people know that some new areas will be created without putting basic science support in danger.

CFN — Where in your view do the learned societies fit in?, What can Federation or its constituent societies do that will be cooperative with and complementary to the activities of the MRC? Furthermore, what do you feel the role of the various learned societies ought to be with respect to council itself?

SIMARD — As you know, council is not itself an organization which can lobby; it is in fact an arm of government — period ! I think one of the major types of help that the learned societies can give to council is by supporting its actions and goals for major endeavours and attempts to define its objectives, its strategic approach towards research. I'm not asking that everybody agree with every position that might be taken by council, but I'm just requesting positive action from my colleagues which reinforce our stands, and positive comments to council that can help us in developing biomedical research in Canada. After all, our objectives should be the same — to give to Canadians support in science in accordance with their wishes. I think the money is there, because if you look at the growth of the philanthropic organizations, they are doing much better than ever before, and are showing better increases in their budget than MRC. The point I want to make is that there is wide public support for research, and I don't always agree with President Kennedy but he acknowledged several times that if there is one thing that the American public would support from their taxes without any question, it is research in the health field.

CFN — Do you think that there is any role for the learned societies, perhaps a consultative role, in appointments to council?

SIMARD — I have thought about that. According to the Act, members of council are appointed by government at its absolute discretion. It is a prerogative of government to name

members of council. One can influence such appointments by suggestions to MP's and to ministers. That's the way to do it, not by suggestions to council itself. One must also bear in mind that council must have a proper distribution among disciplines, among geographical regions, among faculties, and there must be some laymen as well — they are extremely useful. Within all those areas, there must be good representation of women. If you keep those points in mind, the representations of the learned societies should be at the level of MP's and ministers to produce appropriate appointments to council.

CFN — Let's continue on the relationship between MRC, which you have characterized as a government agency, and the learned societies like the CFBS. How do you feel about the activities of the Federation and other groups over the past two years in popularizing and bringing pressure to bear about our concerns?

SIMARD — I think that the Federation has played its role: it has made itself more visible to the public, to government agencies in general, and to government itself. I think now when a decision is taken at the government level, people think twice about the reaction of the Federation, because it represents a large group within the scientific community, a group which is distributed throughout the country. I think the Federation has done extremely well in keeping vigilant about support for science in general in Canada. It has done extremely well.

CFN — Do you think that the science initiatives announced by the government over the past few months, particularly the targets set out by Mr. Buchanan in June, even though they are heavily industrial, are going to have a major impact upon the area the MRC operates in?

SIMARD — Major impact on the MRC? I don't think so. As you know, except for providing sufficient resources for research in universities, which is extremely helpful, there was nothing in that document which related at all to the actual functioning of MRC. I think the document did define some objectives for the other councils, but the MRC already conformed quite adequately to the objectives set out for such councils. For example, direct mention was made that our supplementary funds were to be used in areas of national concern, and these areas of national concern had already been defined to the MRC. Therefore, it was easy to justify the use we made of the supplementary funds by identifying what we were doing in that area. I think it was left less than precise in that respect expressly because those objectives had already been identified by MRC.

CFN — Other than in a few special instances, Canada has not built up major research institutes outside of the universities. At one point, you were quoted as being particularly interested in new independent research institutes. You yourself have been heavily involved in a research institute. Do you feel that more research, which up till now has been carried out in universities, should be carried out in independent institutes, or is this simply something that you hope to develop additionally in the future?

SIMARD — There is no question in my mind that scientists, like any other part of human society, will function much better in an environment surrounded by other scientists, in close contact with a certain number of collaborators. I think you may well experience that in your own discipline within your own department. Perhaps, though, some expertise is not available to you. If you have an institute which brings together a lot of people from various disciplines and various places, so that there is no possibility of intellectual inbreeding, I think it works better. There is no question in my mind, as a scientist myself that this is so.

On the other hand, whether this can be built up now in Canada in the current economic context is an open question. It would be extremely costly, and I don't think we can envisage that in the near future, but in the long run this should be developed.

Remember that there are two objectives which are always cited when justification has been made for funds for research: One always says, "It is to train better doctors, and it is to increase eventually the quality of health care delivery". These have been the two objectives often cited. You don't find in that anything about science itself, the search for truth, finding the basic mechanisms of life. So these first two objectives were defined for MRC in the past, and resulted in development in the universities and in university departments, giving resources to university departments for, theoretically, increasing the quality of teaching and health care as a corollary to the carrying out of research. It hasn't had as its rational the "definition of science". So if I advocated institutes, I meant it originally as a new goal.

In the present context it does not seem realistic to consider the building of large institutes. Another granting agency has had that experience, with results which are well known and which have been criticized quite severely. In addition, the other institutes which exist in Canada are not really independent institutes in the European sense or in the NRC sense. Rather they are made up largely of individuals with their own research grants and programmes. The thing they do share with European institutes is that they do bring together people of different disciplines. At the Cancer Institute in Montreal there are virologists, biochemists, molecular biologists, and so forth, all collaborating on some common team, with a lot of individual independence, of course, but with some common ground and sharing of equipment.

CFN — Aren't the MRC groups and the Negotiated Development Grant projects really also mini-institutes of the kind that you describe?

SIMARD — Exactly, I think they fit the Canadian definition of what an institute is at the present time, but it's not very substantial compared to institutes like the N.I.H. system (in the U.S.) or the European type of institute in France or in Britain, for example, with its MRC units. The Canadian definition of a group is something different. It's on a five-year basis, and we don't pay for the physical space. This has to be provided by the university, and so forth.

CFN — So basically, new institutes are something which you are in favour of in principale but in current times you don't see such a restructuring as being easily or quickly accomplished.

SIMARD — Right. I don't see that.

CFN — I derive from your answer also that you don't see a viable solution as one that takes resources from the current university sector and uses them to construct such institutes.

SIMARD — That's right.

CFN — Is there any particular area or areas of research that you personally feel are particularly neglected in this country, or where we particularly need to bring some pressure to bear?

SIMARD — I haven't done that type of analysis yet. We will try to do such analyses when we try to identify necessities, priorities. We have to

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THE UNIVERSITY OF BRITISH COLUMBIA

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SCHOOL OF ARCHITECTURE

Applications are invited for the position of Professor and Director, School of Architecture, The University of British Columbia. The School has 18 full time faculty members with nearly an equal number of part-time professionals. The three year Bachelor of Architecture programme requires a degree for entrance and has an enrolment of approximately 220 students. A two year graduate program leading to a Master's Degree in Architecture is also offered and approximately 18 students are presently engaged in such studies.

The School is professionally recognized by the Royal Architectural Institute of Canada and accredited by the Commonwealth Association of Architects. It is a part of the Faculty of Applied Science of the University.

The appointment as Director will be for an initial period of five years, and will take effect 1 July 1979 or as soon as possible thereafter. Rank and salary will be in accordance with qualifications and experience.

Applications with supporting documentation and names of referees should be received before 15 March 1979 at the address given below:

Dr. S. Cherry
Chairman, President's Selection Committee
New Director, School of Architecture
c/o Department of Civil Engineering
University of British Columbia
Vancouver, B.C., V6T 1W5
Canada.

VANIER COLLEGE

ACADEMIC DEAN

Director of Instructional Services
(Directeur des Services Pédagogiques)

Vanier College is an English language college of general and vocational education (CEGEP), with a day-student population of 5,600, situated in the Montréal area. It offers 2-year pre-university programmes in arts, science and commerce and eleven career programmes that lead directly to the labour market.

FUNCTION:

Responsible and accountable to the Director General.

The position of Academic Dean encompasses the planning, administration, control and evaluation of all the programmes and resources respecting the institution's educational system. The duties of this position include the following responsibilities: implementing programmes of study, professional development, teaching methods, the measurement and evaluation of learning, research and experimentation.

Through direction and involvement, this senior administrator implements the College's academic objectives. The Academic Dean is a member of the Board of Directors of the College and of the Academic Council.

QUALIFICATIONS:

The candidate we are looking for will have had a number of years of experience teaching in post-secondary institutions and will have acted in a senior managerial capacity during several of those years.

His / her education will be appropriate to such teaching and senior managerial responsibilities in a post-secondary institution.

The candidate will be fluent in English and French.

Interested candidates should send a letter, stating their interest and their particular experience, that would qualify them for this position, attaching copies of their curriculum vitae and names and addresses of four (4) references. Candidates will please indicate date of availability.

Submit by February 15, 1979 to:

Chairman,
Selection Committee for the Academic Dean
Directeur des Services Pédagogiques,
c/o Personnel Services,
VANIER COLLEGE,
821 Ste. Croix Boulevard,
St. Laurent, Québec.
H4L 3X9

know what is being done not only by MRC but by all funding agencies. At the present time, we haven't done that, so I cannot give you an answer as to which disciplines are being better or worse treated. I think the present situation reflects the current practice in which a passive organization like MRC receives requests for grants from individual investigators across the country in various disciplines, so what council reflects is the actual interest of scientists at the present time, but if there is a deficiency within a discipline, it just reflects a view of Canadian scientists that that discipline may not be very important. It has not been any decision of council.

CFN — It sounds as if you feel this isn't that bad an approach, to be guided by the weight of applications. You sound like you are not unhappy about the idea that the major directions in which research would go would be dictated by the people who generate the ideas. In general, are you fairly satisfied with that?

SIMARD — Yes, I am satisfied with that, but I think more has got to be done in the present context to increase our resources. If we want to have better resources we must be seen to identify priorities that are pertinent to the health of Canadians. We must at least be seen to define such themes that are important for our health care in general. It could be occupational health, it could be nutrition, which is a major problem here in which perhaps not enough research is being done. I think if we want to increase our resources this has to be done, without necessarily diverting funds from the basic, solid block that we have now. This approach has been used in the province of Quebec by the Quebec Health Research Council, which was extremely successful, because as those priorities were identified scientists didn't feel cheated because it was new additional money that was coming into the system. And believe me, it was extremely easy to get additional money, not a lot, but at least a little bit, to fund research projects that fell into these defined priority areas.

It worked remarkably well; even the Workmen's Compensation Commission gave us money to do research in the field of occupational health. And what is that really? It could be a basic project, for example, in identifying carcinogenic substances in the environment. It is simply a little bit more applied to some particular problem, so I think such priorities will have to be defined. I am therefore very happy that we reflect current trends in what the Canadian scientist thinks is important at the present time, but I think a little bit more can be done if we want an increased commitment from the government. The two are not incompatible at all.

CFN — How do you feel about the increasing involvement of the provinces in support of medical and biological research?

SIMARD — This is a good question. The provinces are extremely close to the public that they serve, in general. I think in the field of identifying priorities, local priorities, I feel they have a very important role. The thing that a province cannot achieve is the establishment of a peer-review system that is built on enough peers to be clear and decisive. The distribution of grants is a problem. In Quebec, we could hardly solve it. I would say that it's a bit the same in Ontario. If you identify something as a priority, you may find three or four people in that area who distribute grants among themselves, as there aren't enough peers to evaluate them. That's a major problem. However, I am ready to encourage provinces to develop their own research councils, particularly to be present in areas in which, in the present financial context, the MRC cannot be present, so that they don't compete with MRC and its programmes but function in a complementary role to MRC. It's a very important development.

CFN — The risk of the Balkanization of the peer-review system aside, a number of provincial governments have expressed concern that if they operate in this area, and if they overlap the mandate of MRC, that they will somehow reduce the amount of MRC money coming into their province. This seems to be unlikely; if provincial development money produces more and better centres within that province, they then have a better, not a worse chance of getting MRC resources. How do you feel about that?

SIMARD — I feel exactly like you do. I think this is one of the questions that could be put by the learned societies when they advise governments. This is a completely new development, as we talk now about two provinces, Quebec and Ontario, with a start in B.C. and elsewhere, but we don't know exactly what will happen there. I feel if they are present in areas where MRC is not, they will play an important role. There is a danger, and I would like to get the opinions of the learned societies. It's a major endeavor.

I don't see the provinces being present in the funding of operating grants for basic research, not at all. I see them providing salaries for young investigators and the like.

CFN — If the province doesn't fund basic research at all, does that not imply that if basic research is to be supported at all, it largely has to be through MRC, which then gives the MRC a particularly strong obligation in that area ?

SIMARD — No doubt about that.

CFN — And yet the MRC, like any other government agency is also under some pressure to be at least publicly perceived as more applied than in the past. Isn't this then bad news for Canadian basic scientists?

SIMARD — Well, there is a power-play game between provinces and the federal government which goes far beyond those concerns, and it has some implications for funding the MRC and Canadian scientists in general. I think the provinces started finding a place which for several reasons has been left empty by the federal government. Since the funds were not adequate, pressure was directed to provincial governments which perhaps understood better, and perhaps resented the pressure, so that they did start something. These things prove to be useful. If any striking development has occurred in Quebec in biomedical research in the past year it is the establishment of 50 new "chercheurs boursiers" who competed for grants. That was a positive answer from the provincial government to the pressure.

CFN — You certainly would not feel that the entry of the provinces, or at least some of the wealthier provinces, into this area is any reason for the federal government to diminish its activities in this area?

SIMARD — Certainly not.

CFN — Perhaps the contrary?

SIMARD — Surely.

CFN — Do you feel that there is a real distinction between basic and applied work?

SIMARD — We have all, in universities, discussed that, and found out long ago that it's impossible to define work either way. You recall that some schools claim that everything in basic science departments is basic and everything in clinical departments is applied. I find myself being called a scientist doing applied research by that rule, and hence I was working on the biogenesis

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Greater funding stability

... from p. 6

specialized cost-of-research index to determine on an annual basis each granting council's budget. To validate the index, the government would want to construct in-house a "basket of goods" representative of items purchased by the granting council. Complicated questions of meeting different requirements for biomedical, national and social science activities would need to be resolved, including capital versus current cost considerations.

The SEPI or Science Expenditures Price Index, on the other hand, is based on price changes for components of the GNE which are specifically concerned with government expenditures rather than those of special-interest groups, and for that reason alone it should be more acceptable to Treasury Board. As shown in Table I from the Canadian researcher's standpoint SEPI on the whole compares favourably with NRC-RE scores registered over the last ten years. Had MRC funding since 1969-70 been pegged to reflect changes in SEPI (Column 1 on Table II), the 1978-79 budget would have been approximately $72 million.

The new plan will effectively eliminate the on-and-off funding so characteristic of MRC's budgetary process during the past several years and, in that respect, it is "a landmark decision" that the government has taken. For the next five years, the MRC, the scientific community and the public-at-large who have pressed the federal government for a long-term budgetary commitment, will indeed know well in advance how little money their government is prepared to invest in health research.

No sector of the economy should have the effects of inflation on it misrepresented. The new guidelines for funding MRC are not the sort of strategy needed to bring Canadian involvement in both basic and applied biomedical research up to the level now found in other developed Western countries.

Table I. Comparison of price indices used as science deflators[1]
(index points with 1969-70 = 100)*

YEAR	NRC-RE[2]	SEPI[3]	IPI-GNP	CPI
1969-70	100.0	100.0	100.0	100.0
1970-71	105.5	105.5	104.2	102.6
1971-72	110.6	112.5	107.9	106.3
1972-73	117.9	121.2	113.8	111.7
1973-74	132.1	132.0	126.2	121.1
1974-75	155.4	151.7	144.1	135.0
1975-76	177.3	170.3	158.4	148.5
1976-77	203.2[5]	190.1	174.2	159.0
1977-78	228.5[5]	212.0[5]	188.5[6]	171.6[3]
1978-79	261.0[5]	234.0[5]	201.6[7]	184.7[4]

Sources:
1. "Conversion factors and levels of federal funding of science". Science Council of Canada, May, 1977.
2. The National Research Council Research Expenditure Index was derived by NRC from actual expenditure data submitted by grantees in 1973-74.
3. SEPI or the Science Expenditures Price Index was formulated by the Science Council of Canada in 1977. SEPI is based on price changes for current government expenditures on goods and services and gross fixed capital formation in the ratio of 94% to 6%.
4. Consumer Price Index.
5. Estimated from data in "Canadian Statistical Review", Oct. 1978, Statistics Canada.
6. Personal communication, Library of Parliament.
7. Arithmetic average of first three quarters of 1978, "Canadian Statistical Review", Oct. 1978.

Table II

YEAR	A	B	C	D	E	F	G	H	I	J
1969-70	30.89	4.8	7.9	5.32						
1970-71	33.96	4.2	4.2	2.51	32.65				32.59	33.92
1971-72	35.64	3.5	6.6	7.41	35.89				34.74	36.67
1972-73	37.46	5.4	5.7	5.58	39.47				37.41	41.84
1973-74	40.36	10.8	8.9	7.54	46.31				40.74	47.45
1974-75	42.86	14.1	14.9	3.58	54.04				46.81	55.74
1975-76	47.43	9.9	12.2	1.30	59.55				52.52	62.71
1976-77	50.09	9.9	11.6	5.53	68.14	54.27			58.62	72.82
1977-78	56.71	8.2	11.5	2.65	74.85	60.24	55.71		65.37	82.41
1978-79	63.00	6.9	10.4	3.74	32.07	66.04	61.08	62.18	72.15	93.21

A: MRC research budgets in millions $
B: % increase in IPI-GNP over previous year
C: % increase in SEPI over previous year
D: % increase in GNP over previous year in constant 1971 dollars ("real growth in GNP"). Calculated from data in "Canadian Statistical Review", Oct. 1978, Statistics Canada. The 1978-79 figure of 3.74% real increase in GNP was estimated by taking the average values for the first two quarters of 1978 (in 1971 dollars) and multiplying times four
E: MRC budgets (millions $) if the formula, % increase in MRC budget = % increase in IPI-GNP + % real growth in G.N.P. — 1%, were applied for consecutive years beginning in 1970-71.
F: MRC budgets (millions $) if formula-determined 1976-77 to 1978-79 inclusive.
G: MRC budgets (millions $) if formula-determined for 1977-78 and 1978-79.
H: ibid 1978-79.
I: MRC budgets (in millions $) using the formula % increase in MRC research funds = % increase in SEPI from previous year ("counter-inflation formula ").
J: MRC budgets (in million $) calculated according to: % increase in MRC research funds = % increase in SEPI + % real growth GNP — 1%. ("Scientific growth formula ").

John Kucharczyk is executive secretary of science policy for the Canadian Federation of Biological Societies.

South Africa's jarring contrasts

Its university system, like the rest of its society, reveals 'separate realities' of the country's racial groups

(Last in a series)

by Malcolm G. Scully

EMPANGENI, SOUTH AFRICA: As an American visitor drove the National Road from Durban to the University of Zululand near here recently, he could see thatched huts of Zulus on the green hillsides. Small children stood in the roadside heat to sell fruit and pottery to passing motorists.

Inside the automobile the air conditioning worked efficiently, even in the Southern Hemisphere's late summer. The English-language service on Radio South Africa was broadcasting an episode in a dramatization of George Eliot's 19th-century novel *Middlemarch*. The unfortunate Dr. Lydgate and his acquisitive wife Rosamond were quarreling over domestic affairs.

The juxtaposition with the scene outside, and with South Africa's 20th century social and economic problems was, as were so many contrasts the reporter had encountered in this country, jarring.

Solutions from Afrikaner academics

There had been, for example, the conversation with Nic J. Rhoodie, an Afrikaner professor of sociology at the University of Pretoria, an Afrikaans-language university that educators describe as one of the most conservative in South Africa.

Like many Afrikaner academics and intellectuals, Mr. Rhoodie had devoted considerable energy to devising solutions to South Africa's problems that would preserve white hegomony in at least part of the country and at the same time meet the growing Western criticism of the discrimination and inequality so visible in his country.

He rejected, he said, "one-man, one-vote", throughout South Africa, and he believed that at least 90 per cent of South Africa's whites agree. "I am prepared to bet," he said, "that you cannot have a single, unitary state, based on one-man, one-vote."

To create such a state, he said, would be "tantamount to the whites" subsidizing their own suicide.

Another Afrikaner professor put it thus: "One should have some understanding for the assertion that South Africa would be 'the most popular corpse in the world' if she were to succumb to external demands."

Mr. Rhoodie said he believed, instead, that the government should press forward with its plans for separate development of the "homelands" for different black groups in the country. At the same time, he said, it should move quickly to eliminate "petty" apartheid, the discrimination against blacks, Indians, and "coloreds" in such areas as athletics and public facilities.

With "petty" apartheid out of the way, he said, South Africa might very well gain some international sympathy for "grand" apartheid, the policy of separate economic and political development for blacks.

Mr. Rhoodie talked of what he considered to be the "hypocrisy" of many of South Africa's critics among Western politicians and intellectuals. Afrikaners have been in South Africa since 1652, he said. They have as much right to call themselves Africans, he said, as the descendants of the white settlers in the United States have to call themselves Americans.

South Africa, he said, is a victim of the "selective morality" and the "selective application" of foreign policy by the Western powers. "The Western powers now want to sacrifice South Africa to further their own global interests."

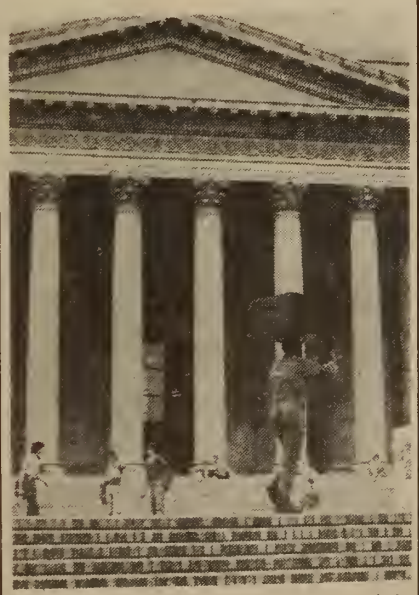
If they were acting from moral principles, rather than narrow self-interest, he said, they would apply the same standards of behavior to black African countries that they try to apply to South Africa.

"I sometimes think it would have been better if the Afrikaners were black. Then they would be the number one tribe in South Africa. They could have crossed its boundaries, slaughtered millions, and the world would have acclaimed rather than condemned them."

"The major point to remember," Mr. Rhoodie said, "is that we've got to live with the solution that we produce. A man from London or the United States can propose a solution and, if it doesn't work out, he can go back to London or New York and say, 'Too bad. It didn't work.' But I've got three children, and I've got to stay here."

A day or so before Mr. Rhoodie was making this impassioned defense of the Afrikaner position, the administrator of the Transvaal, an Afrikaner, had announced that a new opera house, nearing completion in Pretoria, would not be opened to blacks because they were more interested in "war dances" than in opera.

When asked how he expected Westerners to sympathize with the Afrikaner position when their leaders were making statements like that, Mr. Rhoodie said he and many other Afrikaners were "infuriated" by the attitudes of the administrator.



The University of the Witwatersrand in Johannesburg.

"Attitudes like that represent the greatest threat to our security," he said, "greater than that posed by any Communist in South Africa."

One role of the Afrikaner academic, he added, was to expose political leaders to "more advanced" ideas—to convince them that "concepts like segregation or apartheid" were outdated.

Have they succeeded? "It is difficult to gauge the results," Mr. Rhoodie said. "We expose them to this type of thinking, and with the pressures building up and with what is going on our borders, I think they have no choice but to listen."

Race relations group's narrow line

When J.G.E. Wolfson, deputy director of the South African Institute of Race Relations, spent two years teaching in Great Britain, he often read press accounts about developments in his native South Africa.

There were stories of bannings and detention, details of new government plans to provide separate, autonomous homelands for black groups in the country.

"When I was in England," he recalled for the American reporter, "South Africa sounded like cloud-cuckoo land. I couldn't believe what was going on there. Now that I'm home again, it's all just part of everyday life."

The Race Relations Institute has walked a very narrow line to avoid being banned. It has been investigated several times by government agencies, and one of its publications—a study of the government's practice of detention without trial—was suppressed in February 1977.

Much of the institute's support had come from abroad. The Polaroid Corporation, for example, has been providing $50,000 a year for an educational fund for blacks in South Africa.

Last December, however, Polaroid announced that it was ceasing all operations in South Africa. Officials at the institute are concerned that the educational fund, which this year is providing more than 300 black students with scholarships, will dry up.

"It's all very well, their salving their conscience by ceasing operation in South Africa," Mr. Wolfson said about the possible loss of the Polaroid grant. "But we've got to live with their decision."

The president of an American college whose faculty was debating the question of boycotting companies doing business in South Africa recently took a similar view. Boycotts from afar amount to "what I call cheap grace," the president said. "By making such gestures, your conscience is salved at no cost to yourself."

(A spokesman at Polaroid's headquarters in Cambridge, Mass., said that the corporation would "honor its commitments" for 1978 and provide the grant. No decision has been made on whether it will provide the grant after that, he said.)

Government's plural for Bantu

The term traditionally used by the South African government to describe the black population of South Africa is "Bantu," which is generally translated as "people". "Bantu"—a combination of "ntu", which means "person" in a number of southern African languages, and "ba," a plural prefix—was first used by a linguist in 1862.

To many South African blacks, however, the term has become pejorative. It is not a racial epithet, but it carries with it connotations of racial segregation and discrimination.

In belated recognition of the blacks' sensitivities, the South African government recently changed the name of its Department of Bantu Administration and Development, abbreviated B.A.D., to the Ministry of Plural Relations and Development. "Plural" was intended to reflect the government policy of separate cultural and economic development for South Africa's black groups.

Whatever the government intentions, the change in terminology was greeted not with approval but with derision. The English-language Sunday *Times* of Johannesburg commented, "If the old term 'bantu' (to which the government clung so obdurately for a generation) was offensive, the new term 'plural' is hilarious.

"Already it is the butt of a dozen bawdy jokes, of which the most printable suggests the department handles such matters as bigamy."

Survival of the white establishment

R.W. Johnson, senior fellow in politics at Magdalen College at Oxford University, recently completed an account of South Africa's current political problems, *How Long Will South Africa Survive?* He concluded:

"Pondering the future of South Africa's White Establishment is no easy task. It would seem a historical certainly that it must eventually pass away or fall. Yet to ask, 'How long will (white) South Africa survive?' is, in Herman Kahn's famous phrase, to 'think about the unthinkable.' So many factors are relevant. Most are complex, many are humanly repugnant, and some not a little frightening. One has to think about them all the same."

In a recent interview at Oxford, Mr. Johnson, an Englishman who spent much of his childhood in South Africa and taught at Rhodes University in Grahamstown before coming to England, said that the problem in writing about South Africa was that you had to keep "so many realities" in your head at one time.

Each group in South Africa has its own separate history and, consequently, its own view of "the African experience." Those histories now are evolving in the midst of growing geopolitical concern over the conflicts of Eastern and Western powers in southern Africa.

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Teaching for survival *from p. 18*

quickly and spread into so many areas of use as the computer... In a narrower, technical sense, the major problem for the post-industrial society will be the development of an appropriate "infrastructure" for the developing communications networks of digital information technologies that will tie the post-industrial society together... with the explosive growth of computers and terminals for data (the number of data terminals in use in the United States went from 185,000 in 1970 to 800,000 in 1976) and the rapid decrease in the costs of computation and information storage, the question of hitching together the varied ways information is transmitted in the country becomes a major issue of economic and social policy."

14. For example, Lord Zuckerman says "Our understanding of taste physiology and of flavour technology is abysmal. If the next generation and generations beyond are going to be fed acceptably as well as adequately, we shall certainly need to do far more research and development in these fields of study than has been contemplated hitherto... the survival of our Western civilisation is going to depend on a new food revolution." Lord Zuckerman, 21st century food needs thought — now, Nature 258, p. 373 (1975).
15. "Textaid puts uniform rich pulpy texture where it's needed to restore natural food appearance lost in heat or processing". Advertisement for commercial food extender quoted in R.H. Hall, Food for Nought (Harper & Row) p. 70 (1974).
16. "Modern agriculture has adopted the factory approach of high unit production per unit time and all agriculture techniques are devoted to enhancing this objective. This goal should be abandoned and replaced with a goal of providing optimum human nourishment consistent with the basic laws of ecology."
    R.H. Hall, Needed: A New Science of Nourishment (1975). CNI weekly report Vol. V, no. 35, Sept. 4, 1975.
17. See for example the account in Nature 263, p. 455 (1976). Philip M. Boffey, Science 193, p. 129 (1976). Kenneth R. Hammond and Leonard Adelman, Science 194, p. 389-396 (1967).
18. In 1937 Lysenko called in Stalin to declare that his theories of genetics were correct and in accord with Marxist dogma, thereby setting Soviet Genetics back 30 years. The truth (that is bourgeois Mendelian genetics) with the dismissal of Lysenko, did not become accepted until 1965. There are disturbing parallels between this and the attitude of many of our own politicians to science. We are in need of a latter day Canute.
19. The publicity given to the Furbish lousewort is a typical example of the way that environmentalists are outwitted and their cause brought into disrepute. The construction of a multimillion dollar dam was reported to be about to be held up because the flooding would cover the only known habitat of this diminutive plant, making it an endangered species protected by law. Environmentalists were thus exposed to ridicule as opponents of development for trivial reasons since the plant could easily be transplanted and has since been shown to grow elsewhere.
20. For example the cancer rate has risen steadily in Western society and some 80-95% of this is attributed to environmental pollutants. There has been a blossoming of new industry related diseases and "accidents" such as those due to exposure to asbestos, kepone and PCBs.
21. Barry Commoner, Science and Survival (A Viking Compass Book), p. 122 (1963).
22. Bertrand Russell, A History of Western Philosophy (George Allen and Unwin Ltd., London), p. 10 (1946).
23. E.F. Schumacher, Small is Beautiful (Harper Colophon Books, New York), p. 74-75 (1973).
24. Daniel Bell, The Coming of Post-Industrial Society (Basic Books, Inc., New York), p. xxi (1973).
25. W.J. Chancellor and J.R. Goss, Science 192, p. 213-218 (1976).
26. M.J. Perelman, Farming with Petroleum, Environment, 14, No. 8, p. 8-13 (1972).
    John S. Steinhart and Carol E. Steinhart, Science 184, (1974).
27. Industrial production in the developed world has been growing at a rate of 7% a year thereby doubling every 10 years. If we project this growth rate then it would follow that resources would be used up at ten times the 1970 rate by early in the 21st century. Resources on this scale are clearly not available and economists have to plan for a revolution in their subject. For 200 years economics has encouraged more growth with greater profit for business as the solution for any ill. Now, quite suddenly, has come the discovery that the end of growth is here and that even if it were not the continued existence of growth carries previously unsuspected side effects whose cumulative impact may be more deleterious than the benefits of growth.
28. Bill Christiansen and Theodore H. Clack, Jr., Science 194, p. 578-584 (1976).
29. D.H. Meadows, D.L. Meadows, J. Randers and W. Behrens, The Limits to Growth (Potomac Associates Book, New York), (1972).
30. J. Tuzo Wilson, Nature 265, p. 196-197 (1977).
31. P.B. Medawar, The Future of Man, The Reith Lectures 1959, (Methuen and Co. Ltd., London), p. 58, (1960).
32. T. Dale and V. Carter, Topsoil and Civilisation (Univ. of Oklahoma Press) (1955). They say "Civilized man has despoiled most of the lands on which he has lived for long. This is the main reason why his progressive civilizations have moved from place to place. It has been the chief cause for the decline of his civilizations in older settled regions. It has been the dominant factor in determining all trends of history."
33. Fred Hoyle, A Decade of Decision (William Heinemann Ltd., London) p. 175 (1953).
34. Murray G. Ross, The University, The Anatomy of Academe (McGraw Hill) p. 139 (1976).
35. R.L. Heilbroner sums up the thought by asking the question, "Is there hope for man?" in his essay on "The Human Prospect", The New York Review, p. 21-34 (1974). He asks the question objectively and not rhetorically. He notes that there is a disquiet in the air for all thoughtful people. He argues that part of the malaise comes from the fact that the values of an industrial civilization, which has for two centuries given us material advances and a sense of purpose, now seem to be losing their self evident justification. He notes... "The stunning discovery that economic growth carries previously unsuspected side effects whose cumulative impact may be more deleterious than the undoubted benefits that growth also brings" and... "even more disturbing than the possibility of a serious deterioration in the quality of life if growth comes to an end is the awareness of a possibly disastrous decline in the conditions of existence if growth does not come to an end".
    The prospects of over population and nuclear war alarm him even more.
36. Hubert Bloch, Civilization and Science in Conflict or Collaboration?, A Ciba Foundation Symposium (Elsevier-North Holland, Amsterdam), p. 5, (1972).
37. Lester R. Brown, World Without Borders (Random House, New York), p. 134, (1972).

THE UNIVERSITY OF NEW BRUNSWICK

Fredericton and Saint John, N.B.

PRESIDENT

The Joint Nominating Committee for the Office of President of the University of New Brunswick invites nominations and applications for the position of President, the appointment to commence on July 1st 1979. The University of New Brunswick is a provincially supported institution having campuses in Fredericton and Saint John, N.B., with a current full-time enrolment of nearly 6,000 students and a part-time registration of 1,900 in faculties of Arts, Science, Engineering, Law, Nursing, Education, Physical Education, Forestry and Graduate Studies. Nominations and applications should be directed to:

Dr. I. Unger
Chairman
Joint Nominating Committee for
the Office of President
University of New Brunswick
P.O. Box 4400
Fredericton, N.B. E3B 5A3

UNIVERSITY OF NEW BRUNSWICK

South Africa ... *from p. 25*

In that complicated context, some liberal South Africans and many outside observers fear that no "South African synthesis" will be possible. They have difficulty imagining a future in which the Afrikaner experience and the Afrikaner history can coexist with the black African experience and the black African history.

Even so, some South Africans are still committed to finding a peaceful solution. One of them is Percy Qoboza, a black journalist and former Nieman Fellow, who was released from detention in March after being held, without trial, for almost five months.

Mr. Qoboza was editor of *The World,* an English-language newspaper said to be read by more blacks than any other publication in South Africa. The paper was closed down when he was detained. After his release, Mr. Qoboza assumed the editorship of *The Post,* another black newspaper.

At a conference early in 1977 at the University of Cape Town, Mr. Qoboza said he still had "faith that we have not reached the point of no return. I am optimistic, and convinced that we can still turn frustration into hope."

But, he added, "I keep hearing people hammering away at the cultural differences that exist between black and white, and I want to ask you what cultural differences you have detected in me that make me different from you, and that merit me to be caged in the ghettos of South Africa.

"People who keep on repeating these things are merely compounding our problems, and eventually they will have to stand the harsh judgment of history. Eventually, they will have to face the tragic accusing finger as the men who let South Africa down in its hour of need."

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Doors to the West open wide

As Chairman Hua breaks down the barriers with trips to Rumania, Yugoslavia and Iran, China's universities are encouraging foreign students. Robert Milliken reports.

With his appearance at the recent national education conference in Peking, Vice Premier Teng Hsiao-ping has confirmed his role as the driving force behind the profound changes taking place in China's education system.

Teng opened the conference with a speech that went further than anything so far in rejecting the policies of the last 10 years and setting the seal on the new line, namely a complete overhaul of education as the key to acceleration of the national economy.

The question now is, can China carry through such changes to meet the enormously ambitious targets it has set for the year 1985, targets which are unofficially reported to include a doubling of the present grain output and a trebling of steel production ?

Teng delivered an effusively warm overture to China's nine million teachers, and went so far as to extend the party's "regards and respects" to them, and its "particular regards and respects" to primary school teachers whom he likened to "gardeners tending the successors to the revolution".

The teachers' political and social status must be raised, he said, and they must command the respect not only of students but also of society as a whole.

Teng promised changes in the living conditions for university teachers — most of them live in dormitories like their students — and a rise in their wages. It was typical of his belief in the promotion of material incentives generally.

But, possibly to assuage those on the left in the power structure who still consider this unrevolutionary and too bourgeois, he acknowledged that these prizes could not be given immediately because of China's "limited economic strength". He concluded: "We advocate the revolutionary spirit of daring to think and speak. It does not matter if opinions differ."

Teng's speech—his third major one on education in recent months — was significant, not just for its final restoration of intellectuals to a key role in Chinese society, and its renewed emphasis on examinations, the downgrading of politics and the promotion of experts as the fundamental new tenets of education.

It also expressed very much the changed mood of China which immediately strikes the many thousands of visitors currently being admitted under the new open door spirit towards the Western world.

About 150,000 foreigners are to be admitted this year, three times last year's figure. Most of them are Japanese and Australians, but an increasing proportion will come from the United States and Western Europe.

In particular, the Chinese are trying very hard to impress the Americans and the Russians are increasingly painted as Public Enemy Number One. The waiting list for Chinese visas in the United States is said to be around two million.

Recent visitors include teams of American and West European nuclear scientists, being flown around the country's universities and research establishments and met at airports with limousines, unlike other travellers who are ferried about in buses.

The reason for all this activity is two-fold, and it dove-tails perfectly with the Teng-inspired plans for education. China is anxious to earn as much foreign currency as it can to help pay for the programme of modernization on which it has embarked.

This has involved both a revamping of the internal education system and, in the much resurrected saying of Chairman Mao, "making the past serve the present and things foreign serve China".

For foreign visitors, the emphasis is now shifting away from criticizing, per se, the "gang of four" whose arrest in October, 1976, was followed by a year of official vilification and public confusion.

Instead, the new goals now firmly entrenched, in the name of "wise leader" Chairman Hua Kuo-feng are being extolled, although the "gang" is still very much the scapegoat for everything that went wrong during the Cultural Revolution.

At the education conference in Peking, for instance, 6,000 delegates were told of plans for bringing in uniform university entrance examinations and text books throughout the entire country.

As well as taking over charge of this from the provinces, the Ministry of Education in Peking will coordinate the training of teachers, whose ranks and titles — professor, lecturer, tutor, principal and so on — have now been restored.

Schools and universities have responded enthusiastically. Students and teachers alike talk about the abolition of cramming, rote learning and "spoon feeding" as teaching methods. From now on, they say, almost echoing Teng, there will be more emphasis on "thinking by ourselves and thinking independently". What this means in practice, no one seems willing to elaborate.

The promotion of science and technology and foreign languages has almost become an obsession. Cinemas, radio and television all feature programmes on science at prime listening and viewing times.

English has replaced Russian as the most favoured foreign language and the radio is extensively used to broadcast English classes to the masses. It is now compulsory for all science students to learn English, although not vice versa.

Postgraduate studies, suspended for almost a decade, are starting again. Courses thrown out of universities because they were too bourgeois are being reintroduced, including psychology and industrial psychology and, at postgraduate level, Buddhism, the history of religion and French literature.

Increased numbers of foreign students are actively being sought to enable China to send more of its own students abroad on exchange.

At Peking University, the country's most prestigious campus, these changes have led to friction between the new and the older students.

The latter, who arrived on campus when political purity was still pretty much the sole criterion for entry, have been subjected to campaigns by their younger colleagues accusing them of being ill-equipped to achieve good results; in some cases examinations are not being held at all for third-year students because, it is said, they are not considered to have sufficient knowledge; they are being made to suffer for their university's former support for the "gang of four".

The older students — and many of them are now in their late twenties, having spent years doing manual labour before going to university — are equated with the once famous but now disgraced Red Guard leaders, Kuai Ta-fu of Tsinghua University in Peking, and Nieh Yuan-tzu of Peking University, both of whom were arrested recently after being paraded around their old campuses and criticized before meetings of students.

While representatives of that era are still falling very publicly, many of those whom they purged are in turn being quitely restored.

Without ceremony or announcement of any kind, the president of Nanking University, Kuang Ya-ming, returned on May Day to the job from which he was dismissed 10 years ago at the height of the Cultural Revolution.

Unlike many teachers who suffered a similar fate, he was spared being sent for "re-education" and has spent the last 10 years confined to his dormitories reading books.

How much the new blueprint for education amounts to de-Maoization is difficult to judge. Mao's writings on so many subjects were so diverse that it has not been difficult for a suitable Mao statement to be plucked out of the air to justify virtually any changes.

Even now there will be big problems providing places for those with talent. At the university entrance examinations held last December, the first for 10 years, there were unofficially reported to be 20 million applicants for 200,000 new university places — less than one-third of the places available before 1966.

Peking University now has less than 10,000 students, about half its pre-1966 level. Nanking University has only 3,800 students, but there are plans to build this up to 6,000 by 1981.

There is a corresponding shortage of teachers throughout China. Many older ones are still wary of returning to a profession in which they were once persecuted, while the younger ones have not yet been trained to handle the new system.

Undeterred, the government has approved the establishment of another 55 universities, including 13 colleges abolished or merged with others during the Cultural Revolution.

China's leaders are no doubt taking a calculated risk in the headlong plunge towards specialization and elitism which they have launched. It will need a long period of political stability for the new system to bear fruit.

Whether China will get this much needed breathing space, it is too early to tell: there is plenty of latent energy under the surface just waiting to be released at the slightest sign of strain at the top, as the recent past has shown only too well.

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Berkerley ... *from p. 14*

on a campus of the University of California.

(4) By completing with a minimum grade of C— a college course of a level equivalent to the third course of a foreign language as taught at Berkeley.

(5) By completing in two foreign languages work equivalent to the second course of each as taught at Berkeley. If completed in a high school, this work must be acceptable in satisfaction of the foreign language requirement for admission to the University of California; if completed in college, it must be completed with a minimum grade of C—.

(D) *Humanities, Social Science, and Natural Science.* The candidate shall complete, outside the area of the major, at least eight courses from the Letters and Science list approved for breadth credit. Such courses must have a minimum unit value of three. The executive committee, on the recommendation of the committee on academic program, shall consider each course on the Letters and Science list for assignment to one or more of three areas: Humanities, Social Science, Natural Science.

Each candidate, except as noted below, shall complete two courses from each of the two areas outside the area of the major. this part of the requirement may not be satisfied by courses in computer science, mathematics, or statistics, or by elementary courses in a foreign language. The candidate may satisfy the remaining part of the requirement by completing, outside the area of the major, any four courses from the Letters and Science list approved for breadth credit.

For students majoring in computer science, mathematics, or statistics, the above requirement is modified as follows: These candidates shall complete two courses from each of the three areas. This part of the requirement may not be satisfied by courses in computer science, mathematics, or statistics, or by elementary courses in a foreign language. The candidates may satisfy the remaining part of the requirement by completing any two courses in the humanities or social sciences approved for breadth credit.

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Applications will be received until February 28, 1979

Quebec ... *from p. 9*

This search for basics is characteristic of a profound and everpresent ideological current within Quebec society, namely, the quest for authenticity and truth.

Conclusion

In summary, the white paper on Quebec's cultural development policy generally reaffirms the value system that has characterized the Parti Québécois program [9] since 1975. In certain sectors, such as education, both documents, the white paper and the PQ program, put foreward basic precepts, such as those relating to democratization and participation.

On the other hand, in a sector such as that of research, the white paper distances itself considerably from the position taken in the Parti Québécois program, at least as regards the universities. The program asserts "that a Parti Québécois government will undertake, among other things, to promote research, refraining from setting up its own laboratories and its own research centres, but rather favouring research centres or institutes that are either autonomous or affiliated with universities".[10]

Today, the Minister of Education, who himself participated in the work of the PQ committee on cultural policy, feels that "it is not clear... that the universities can... satisfy Quebec's main needs in the area of research."[11] Could it be that when academics leave their departmental assembly to take a seat in the National Assembly, they tend to take the laboratories and research centres with them, thereby suggesting that research is more the concern of individual academics than universities?

1. *A Cultural Development Policy for Quebec*
   Quebec City, Official Publisher, 1978, 2 volumes.
   NB: The Department of Communications, through its information services, has published a 16-page document entitled *La Politique québécoise de développement culturel* which summarizes the white paper.,
2. *Livre vert sur la recherche scientifique*
   Quebec City, Official Publisher (in preparation).
3. *Rapport de la Commission d'étude sur l'enseignement supérieur*
   Quebec City, Official Publisher (in preparation).
4. Livre blanc sur l'enseignement collégial
   Quebec City, Official Publisher, 1978.
5. *Primary and Secondary Education in Quebec. Green Paper*
   Quebec, Department of Communications, 1977, 147 p.
   NB: *Informeq,* the house organ of the Department of Education, has published a special issue containing the Green Paper (French version) in its entirety (Quebec City, 1977, 32 p.).
6. Duchesne, Raymond. *La science et le pouvoir au Québec*
   Quebec City, Official Publisher, 1978, 126 p ("Études et dossiers" series, La Documentation québécoise, Department of Communications).
7. Speech delivered by the Honourable Jacques-Yvan Morin, Minister of Education (unofficial translation) on the occasion of the launching of a book by Mr Raymond Duchesne, *La science et le pouvoir au Québec (1920-1965).* Montreal, July 3, 1978, 7 p.
8. Commission d'étude sur les universités, *Document de consultation*
   January 1978, Quebec City, Department of Education, 80 p.
9. *Le programme, l'action politique, les statuts et règlements*
   1975 edition, Montreal. Parti Québécois, 1975, 55 p.
10. Mentioned on page 27 of the 1975 edition of the program and again on page 46 of the 1978 edition.
11. Speech delivered by the Honourable Jacques-Yvan Morin, Minister of Education (unofficial translation) on the occasion of the launching of a book by Mr Raymond Duchesne, *La science et le pouvoir au Québec (1920-1965).* Montreal, July 3, 1978, 7 p.

The author is Research Advisor with FAPUQ

Venus de Milo ... *from p. 21*

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1 Minutes of Proceedings and Evidence of the Standing Committee on Justice and Legal Affairs. House of Commons, 7 Feb. 1978, 5:82. The full quote: 'Mr. Leggatt: "How about the Venus de Milo? Do you want to get rid of the Venus de Milo?" '

2 B. Kutchinsky, "Deviance and Criminality: The Case of Voyeur in a Peeper's Paradise", in *Diseases of the Nervous System,* XXXVII, 3 (1976); "The Effect of Easy Availability of Pornography on the Incidence of Sex Crimes: The Danish Experiment, *Journal of Social Issues,* XXIX, 3 (1973); "Eroticism without Censorship", *International Journal of Criminology and Penology,* 1 (1973).

3 House of Commons, Votes and Proceedings, 22 March 1978.

4 *Background Notes on the Proposed Amendments to the Criminal Code, the Canada Evidence Act and the Parole Act (Bill C-51),* Advisory Council on the Status of Women, 1978.

5 *Minutes of Proceedings and Evidence of the Standing Committee on Justice and Legal Affairs,* House of Commons, Issue No. 5, 7 Feb. 1978.

6 This relies on section 498 of the Criminal Code, a little used section which allows an attorney-general to require a trial by jury where the penalty is more than five years. However, Mr. Basford, the former Minister of Justice specifically stated in his introduction to Bill C-51 that one of the purposes of increasing the penalties was to allow this option to the attorneys-general.

Simard ... *from p. 24*

of ribosomes, which is not immediately relevant to any applied work that I know of, at least in the short run. I don't have any definitions for those categories. I think perhaps any project can be applied. We should remind the scientist that he should think a little bit in terms of application, but surely we must not tell scientists what to do.

CFN — In summary, you feel that scientists simply haven't been as good as they should be about articulating the possible applications of their work?

SIMARD — That's exactly it.

Salary decline ... *from p. 31*

productivity (the general standard of living). As a measure of price increases, the Consumer Price Index of Statistics Canada is used and transformed using the academic year 1960-61 as base. The measure used for productivity is the output (Real Domestic Product) per man-hour.

In the second part of the study, the median "nominal" salary is transformed into "real" median salary (in constant dollars 1960-61) using the consumer price indices for each rank and for each year from 1960-61 to 1974-75. Then the author transforms this "real" median salary by using his productivity index into what is called "le traitement fictif" or the "fictional" median salary.

The conclusion for all professors is that the "real" median salary has increased from 1960-61 to 1972-73 and has begun to decrease after that. The "fictional" median salary has been generally decreasing since 1960-61 and, in particular, since 1970-71.

The same general conclusion applies for the four ranks: full professor, assistant professor, associate professor and lecturer.

If both the increase in the cost of living and the productivity of the nation are considered, the author concludes that the economic status of the profession has declined, particularly since 1970-71.

The document is available for $6.00 at FAPUQ, 2715 Côte Ste-Catherine, Montréal, H3T 1B6

Robert Léger is CAUT professional officer in charge of economic benefits and salaries.

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Widespread education poses threat to Egypt stability

In the first of a series surveying Middle East colleges and universities, Dilip Hiro looks at Egypt whose university at Al Azhar marked the birth of higher education in the Moslem world.

In no other Middle Eastern country is higher education as wide-spread as in Egypt. Each year three-fifths of the high school graduates go on to the country's 13 universities and 112 colleges, most of which were started (or expanded) in the 1970s, to cope with the dramatic rise in the number of school leavers.

The current academic year opened with the student population at the universities alone exceeding half a million — a 100 per cent growth in five years — with the University of Cairo going beyond the 100,000 mark.

Cairo's university is a gigantic affair with 14 faculties spread out along a mile-long boulevard, just off the western bank of the Nile — and a corner of Roda Island, in the Nile, where the university's teaching hospital and medical faculty are situated.

The 13,000-strong faculty of arts — offering Arabic, and six foreign languages, including Japanese, history, geography, philosophy, sociology and psychology — is the biggest, and commerce runs a close second. (Probably half of the students in these disciplines are external. They do not attend lectures, and come to the university only to take their finals).

The fastest growing department in the faculty of commerce is business management because of the high demand for graduates in the job market, and the reputation enjoyed by the department due to the use of the staff loaned by the American University in Cairo, the smallest and the most prestigious university in Egypt.

Business management is much in demand at the American University in Cairo (AUC) as well. Half of its 500 postgraduate students are enrolled in the management programme, established in 1966, which has acquired a reputation far beyond Egypt.

The same is equally true of the AUC's undergraduate courses — in the arts, social sciences, and pure sciences. A stringent method of selection keeps the undergraduate body steady around 1,000, the lowest in the Middle East.

The AUC is a private institution registered in Washington D.C. Almost half of its teaching staff is American, making it even more American than the redoubtable American University of Beirut.

The undergraduate and graduate programmes use American techniques, textbooks, and audio-visual materials. English is the medium of instruction.

This puts the children of the Egyptian elite — who often go to English-medium schools — at an advantage, since they perform very well at the English language entrance examination.

The university charges low fees — Egyptian £200, British £160, a year from the Egyptians, who form four-fifths of its student body, leaving it with a heavy deficit in its annual budget of $9 million, (Egyptian £6 million). Most of this deficit is covered by donations and gifts from the American citizens, companies, foundations, and, most significantly, government (which reallocates some of the local currency received for its food exports to Egypt to the AUC).

The American University has a long history of interest in the social welfare of Egypt. Four years after its founding — in a century-old palace of a Pasha in central Cairo — to teach English and Arabic at university level, the AUC started a special division to undertake health and welfare projects.

At the end of the Second World War it added an adult education programme and renamed it the public service division. Today the main activity of this division is to teach Arabic to non-Arabs, and English to the Egyptians. Of the 7,500 people handled annually by the public services division, two-thirds are students of English.

The university runs a special English Language Institute. It provides scholarships to some 200 English language teachers from the Ministry of Education and is also working with the ministry to help improve the teaching of English in schools.

Among those who flock to the AUC's public service division classes are many of the students from the Institute of Education of the Ain Shams University. Situated in a north-eastern part of Cairo — on the site of the ancient university of Aun, dedicated to the worship of the sun god Ra — the Ain Shams University was founded in 1950 to meet the demand for education after the war.

It is now almost as large as the University of Cairo, and is equally overcrowded. The average teacher-student ratio is 1 to 120, with certain sections, such as the Institute of Education, having a ratio of 1 to 300 against the American University's 1 to 15.

Oddly enough, students enrolment in the Arabic department of the Institute of Education is so low and the demand for teaching Arabic both in Egypt, and the Arabic-speaking parts of Africa, so high that the government offers a modest stipend to all those who join this department. On the other hand, there is such a rush to enrol into the English department that the applicants are screened.

The other major change over the past generation at the Ain Shams and elsewhere, is that women are allowed to enrol and attend mixed classes. Women now form a third of the Ain Shams's student body of 95,000, and there are more women in the arts faculty than men.

The only exception to co-education is the Al Azhar, the world's oldest university, where men and women are taught separately. Established 1,001 years ago, at the Al Azhar mosque in Cairo, this centre of learning was later to become a model to the European universities based on the principles of combining a place of prayer with that of higher learning, and having the students live on the premises.

The gown worn by the teachers at Europe's classical universities is a variation of the dress used by the shaikhs (i.e. old teachers) at the Al Azhar. And the use of the term "chair", to describe a discipline, is rooted in the fact that the shaikh at the Al Azhar sat (and still does) in a chair, by a column, while his students squatted on the floor in front of him.

At the Al Azhar, the practices of the past continue, with the students attending lectures inside the mosque, where individual classes are marked by nothing more specific than a column. The star attraction of this unique institution is still the study of Islam which draws students from all over the Muslim world.

In 1965 other faculties, with their own premises built next to the mosque, were added to the university, and there are now nearly 50,000 students on the two campuses, one for each sex. However, even the non-religious faculties stress the study of Islam. The medical students, for instance, have to take courses in religion for the first three years.

The most popular discipline at the Al Azhar, or any other Egyptian university, is medicine — followed by engineering, business management and English. A law applied through the Central Organization for Man-power Planning, guarantees a job to a university graduate, once he has completed his compulsory military service, with the job fetching Egyptian £25 (£20) a month for a sixth grade civil servant, to Egyptian £40 (Br £33) a month for a newly graduated doctor.

The result is a highly inflated bureaucracy — a price the government has to pay to ensure that there is no large body of unemployed university graduates likely to turn to militant political ideologies or violent action.

Despite all this, the university students played a fairly important role in resisting the deNasserization process that President Sadat initiated in the early 1970s. But the tide turned in Sadat's favour after the October 1973 war against Israel and, since then, the conservative forces have been gaining ground among the students in Egypt.

At the Ain Shams university, for instance, the "religous group" did so well at the last election of the students' union officials that it reduced the strength of its adversary, the "political group", from 41 to 7, capturing all the seats its rival lost.

"There are basically two currents among the university students today," said Dr Hameed Khafeef of the Al Azhar University. "The socialist students speak of socialism and democracy; and the other kind speak of God and faith. The religious current is the stronger one now."

No doubt the conservative trend at the universities received a further fillip by the violent events in June in the two Yemens — the assassination of the president of North Yemen, and the execution of the president of South Yemen by the more radical elements in the country — which brought an unprecedentedly harsh reaction from the conservative Arab states, culminating in the call for economic boycott of the Marxist South Yemen by the Cairo-based Arab League.

However, it is hard to see how this swing to religious politics on the campuses, or off them, can help solve the mounting economic problems of Egypt — rising inflation, gradual impoverishment of large sections of society, and breakdown of public services — that affect the university community as much as others.

The presence of an ever-increasing body of highly literate citizens, in such circumstances, can pose a real threat to the social system as a whole. Aware of this, the Egyptian government is already considering ways of restricting admission to the universities and colleges.

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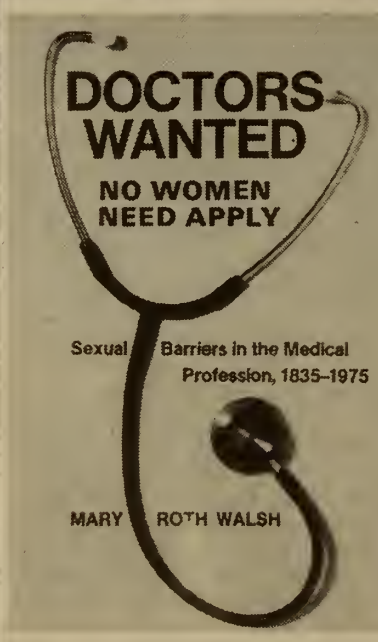
Applications for two positions of Assistant or Associate Professor level are invited. Positions will become available beginning July 1, 1979, subject to budgetary approval. One position is for a Gross Anatomist with experience in teaching anatomy to medical and dental students. The second position is for a Cell Biologist to teach medical, dental and science students. Applicants should have an M.D. and/or Ph.D. degree or equivalent. The salary will be in accordance with qualifications and experience of appointee. Applications accompanied by a curriculum vitae and names of two referees should be sent to: *Dr. S. Fedoroff, Professor and Head, Department of Anatomy, College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.*

Women in American medicine

by Elizabeth Gibbs

Mary Roth Walsh, **Doctors Wanted: No Women Need Apply - Sexual Barriers in the Medical Profession, 1835-1975,** Yale University Press, New Haven, U.S.A.



Mary Roth Walsh's *Doctors Wanted: No Women Need Apply* is activist history, a dialogue between past and present, a search for today's meaning in yesterday's lessons, and a warning: what happened once may well happen again. These concerns introduce Walsh's investigation into the largely ignored subject of the role of women in American medicine. As she traces the struggle of women to enter mainstream medicine through traditional training and education, capped by official recognition through degrees and professional memberships, she constantly reminds us that the encouraging statistics of the latter part of the 19th Century were followed, by the turn of the Century, by a steep decline which has continued until the 1960's. Hence the urgency of her attempts to understand both the initial successes and the subsequent reversals.

The book focuses on the city of Boston, where most of the "crucial battles" in the women's war to enter the medical profession were staged: the losing contest between women and Harvard Medical School, which opened its doors to women medical students only in 1945; the powerful Massachussets Medical Society which controlled state licensing, and which was conquered in 1884 when Dr. Emma Call became its first female member; the establishment in 1848, by Dr. Samuel Gregory, of the New England Female Medical College, the first college for women medical students in the world; and the New England Hospital for Women and Children, which opened in 1862 and became a "feminist showcase."

Boston was also the city where the key figures in the battle lived. Dr. Harriot K. Hunt, first woman to achieve a successful medical practice in the United States, albeit without benefit of a formal medical education, worked there. So did Dr. Marie Zakrzewska, European-trained and American-educated founder of the New England Hospital for Women and Children. Tough and brilliant, Zakrzewska was also an object lesson in the benefits of sisterhood, being supported and encouraged by Harriot Hunt and even housed by Elizabeth Blackwell. One of Zakrzewska's students was Dr. Mary Putnam Jacobi, America's leading woman physician in the late 19th Century. The list and the stories go on and on, as Walsh exposes new and unfamiliar names in the pantheon of female medical pioneers.

The problems faced by all 19th Century medical people were manifold: the shockingly disorganized and uneven state of medical education, licensing and accreditation procedures; the fact that medical care of any sort was a failure approximately fifty percent of the time; and the rather greater successes or rather lesser failures of such rival systems as homeopathy and Thomsonianism. There was also the seemingly insurmountable challenge posed by the fact that the really important ingredients for establishing a lucrative and satisfying practice were "family background and wealth, social standing, and friendships..."[1]

Women faced all these problems and more. The prevailing biological deterministic views of their sex as hysterical, unpredictable and designed specifically for motherhood and kitchen duties presented horrendous obstacles to their admission to medical schools, as did the prurience and vengeful fear and resentment of their would-be fellow students and colleagues. The fundamental disrespect for those parts of her physique which differentiated her from a male was expressed through cavalier attacks on it by experimenting male doctors. The classic exemplar of this attitude was J. Marion Sims, who once entertained visiting doctors with a four day marathon of various female operations, climaxing with a lavish dinner for his guests.

At no time, however, was there a corresponding period of urological experimentation; the male organs were protected from such treatment by cautious and concerned urologists. Women doctors also had to face the entire climate of social prejudice which dictated that modest women neither consult male doctors for "womanly complaints," nor disgrace their sex by attending lectures and clinics in which indelicate matters were discussed and observed. Women doctors were thought not to marry, or else to marry and waste valuable educations, and to be utterly incapable of entering the honourable field of surgery while at the same time to threaten horribly the male bastion of gynaecology and obstetrics.

On the positive side of the battle was the powerful feminism of the mid and late 19th Century which made sisters of individual women, and provided emotional, psychological, ideological and practical material support to those of them who chose the medical field as their area of concentration. In the 20th Century two World Wars permitted temporary gains as foreign battlegrounds swallowed up American males, but once victory was restored these small victories were speedily lost. Only the resurgence of feminism in the 1960's, and concommitant anti-discriminatory legislation, have provided a second impetus for ambitious women to attempt to fight for what their forebears once had.

Walsh's history of women in American medicine is thoughtful and, within the limits of her own premises, thorough. Her decision to concentrate on the women involved in regular traditional medicine is certainly based on valid observations about the professionalization process in medicine, and on the nature of power in the United States. Nonetheless, it does mean that there is virtually nothing about the legions of women who practiced irregular systems of medicine, the main exception being Harriot Hunt. And the vast field of midwivery is necessarily excluded, because the grannies were not regulars. The decision of such medical stars as Marie Zakzrewska to focus on regular medicine is well explained, but it would have been useful to analyse the reasons for the different decision taken by so many other women. Then too we might have come to understand something more of the attitude of American society generally towards the entire medical profession.

Walsh uses a curious term to describe women: minority. True, this half of the population shares many characteristics of oppressed minorites: exclusion from power and privilege, and being the object of contempt and ridicule, for examples. Yet Walsh's use of this political word obscures to a certain extent the position of women in society. Surely the oppression and suppression of one half the population by the other half is as deplorable as the fact that this same treatment was meted out to minorities? The struggles of the suppressed may be compared and parallelled most fruitfully without the added implication that the motivation for the suppression had common roots.

1. Walsh, p. 81, citing W.G. Rothstein, AMERICAN PHYSICIANS IN THE NINETEENTH CENTURY: FROM SECTS TO SCIENCE, Baltimore, 1972, pp. 206-7.

A multidisciplinary approach

by Gordon Irving

Religion and Culture in Canada / Religion et culture au Canada. Waterloo, Ontario: Canadian Corporation for Studies in Religion (Wilfrid Laurier University Press), 1977. 566 pp. $7.50 paper.

The study of religion in Canadian universities has tended to be purused within the traditional disciplines and departments. More recently, however, a more multidisciplinary approach has emerged within the departments of religious studies. The Symonds Report has provided additional impetus by pointing to the historic and contemporary relevance of the religious dimensions of Canadian society. This collection of papers provides an opportunity for acquainting oneself with and assessing this more focused and multidisciplinary approach taken within departments of religious studies. The twenty four authors represent a variety of disciplinary backgrounds and cover a wide range of approaches and topics. Many are known for their work within their respective disciplines, all are members of the Canadian Society for the Study of Religion, and almost all are members of departments of religious studies. Taken together, the collection does not purport to be an overview of religion in Canada. Attempts to do this, usually in a chapter in a book or from a single disciplinary perspective, end up as being only more or less inadequate. These contributions should rather be taken as representative of the variety of interests and approaches found within the area of religious studies. These range from history to literary criticism, from social issues to personal biography. They also include both English and French Canadian viewpoints, (Six of the papers are presented in French).

Such a range and variety poses organizational problems. The editor, Peter Slater, points out that there is no single theme or focus, and has chosen to present these articles under the general rubric of religion and culture. Both of these terms and the relationship between them are problematic, but Slater has bypassed interminable debates by presenting the two as interpenetrating and interacting, by seeing them as the juxtaposition of the spiritual and temporal in Canadian society. This general position is not imposed upon or always reflected in individual papers whose authors establish their own conceptualizations and usages ranging from the more traditional institutional forms to the broader aspects of transcendence, meaning and

ultimacy that are more difficult to separate from the concept of culture. These usages are seen in the articles exploring the political and social impact of various denominations in Canada, and in the discussion of hockey as expressing a set of values or a world view.

The variety of topics and approaches almost guarantees that no two readers will find all of equal interest and that assessments will vary accordingly. All, however, from the analysis of myth and poetry to hockey and shamanism, attempt to relate religion to broader aspects of Canadian society. The more general reader will find this relation brought out most clearly in the articles dealing with nationalism and national identity on the one hand, and the questions of social issues and ethics on the other.

The largest number of papers reflect the current concern with nationalism and national identity. John Webster Grant's historical perspective on religion and national identity is probably well known to many. This same relationship is dealt with by Clifford who emphasizes not only the emergence and the decline of the identification of Canadianism with the Anglo-Saxon Protestant ethos, but also its ethnocentric bias and the consequences that this entailed for other religious adherents, especially immigrants and French Canadians. Rousseau and Tissot, through the analysis of myth, indicate parallel developments and forces shaping the French Canadian identity and nationalism. Klassen proposes two seemingly disparate figures, Louis Riel and J.S. Woodsworth, as epitomizing, each in his own way, a quest for national identity. Both are presented in their deficiencies, Woodsworth in what might be judged as his intolerance and Riel in the excesses to which his vision impelled him. Yet each is seen as drawing upon a religious conviction as the basis for his respective struggle.

The two final papers contribute to the current nationalism debate. Both assess the role of religion and both consider nationalism from a theological perspective. Gualteri attempts to provide a theological basis for distinguishing a "humane" from a "demonic" nationalism, and for a valid internationalism. This basis is found in a view of God and the redemptive process as immanent in historical collectivities, their experiences and traditions. Along with a love for the person, this demands a respect for the diversity and distinctiveness of national collectivities and cultural traditions within pluralistic societies and internationally. However, Gualteri does not grapple sufficiently with the problems inherent in the application of these principles to the concrete realities of Canadian society. How is respect for distinctiveness maintained when that distinctiveness is rooted in traditional and personal commitments antithetical to or rejected by the distinctive traditions of other groups? What solutions are possible when these very elements are the basis for conflict and pose obstacles not only to nationalism but also to ecumenism? In the face of the persistence of distinctive Roman Catholic and Protestant traditions, denominational and sectarian traditions, the common synthetic religion proposed seems as visionary as a common nationalism emerging from the divergent nationalisms of our pluralistic situation. Also, in pointing to the external threats to national identity and a valid internationalism, the author gives illustration of how difficult it is to avoid moral evaluations while attempting to maintain a respect for distinctiveness. His disclaimer of moral superiority for Canadian society does not fit well with his characterization of the "moral decline" of the United States and its nationalism described in terms of "militarism, racism, savagery, materialism, alienation and imperialism".

Desplands treatment of nationalism is more cautious and less optimistic. He clearly distinguishes the religious community from the national community, indicating that they can be linked together only artificially. Nationalism poses its own problems and dangers that are compounded in attempts to base it upon religious principles. Given the divergent nationalisms in Canada today, national identity is something that can only be imperfectly achieved and more on the basis of pragmatism than religious principles.

The second largest group of papers deal with the relation between religion and ethical issues. These are dealt with in different contexts of Canadian society. Williams outlines the role denominations have played and continue to play in Newfoundland. They are not only an integral part of the political system, but also act as a basically conservative force in the social life of the province. This is illustrated pointedly in the failure of the churches to address themselves to basic problems of social injustice. The instances detailed to bring this out are the responses of the churches to the seal hunt disaster of 1914 and the more recent flurospar tragedy at St. Lawrence. In contrast, Baum's study of the Antigonish cooperative movement in Nova Scotia provides an indication of a more positive role for religion. Social Catholicism is seen as the basis or support for a movement toward social reform and social justice. The issue of feminism within the context of Quebec is raised by Dumais who documents the influence that a traditional Catholic culture and ecclesiastical structure have in impeding egalitarian objectives in the religious sphere, even when these are accepted in principle. Finally, the problems of law, criminal justice, and morality are dealt with in articles by Hutchinson and Kerans. These issues are usually presented in a philosophical, social science or even a traditional theological perspective. Both authors, however, present alternative theological perspectives to criticize and provide additional insights to this important area of debate and policy.

The remaining third of the papers cover a variety of topics from architecture to new religious movements which will relate to particular interests among the readers. While there is no central position taken in the collection and while debate between authors emerges only in a couple of instances, there is still much room for debate between author and reader. The value of the book might lie in its ability to generate such debate and interest. The format chosen for the book makes it relatively inexpensive and not unpleasing. It should be a worthwhile book for both students of religion and for those with a more general interest in Canadian society.

About our reviewers

Elizabeth Gibbs is Research Director of the Centre d'Étude du Québec at Concordia University... Gordon Irving is Professor in the Department of Sociology and Anthropology at Carleton University... H.N. Nguyen is Assistant Professor in the Economics Department at Lakehead University.

Unrealistic recommendations

by H.N. Nguyen

David M. Cameron, **The Northern Dilemma: Public-Policy and Post-Secondary Education in Northern Ontario,** Ontario Economic Council, Toronto, 1978. $3.50.

Relatively high overhead costs and the absence of a discernible provincial policy are identified by this Ontario Economic Council study as the basic problems plaguing the system of post-secondary education in Northern Ontario. High costs present the province with the dilemma of efficiency in resource allocation or geographical equity in the quality of post-secondary education. The lack of an explicit provincial policy has resulted in the extension of southern perspectives to the north. This, Mr. Cameron argues, reflects an insensitivity on the part of the provincial government to the unique needs of northern communities.

With regard to the cost-related dilemma of efficiency and equity, the author proposes that, for their basic teaching responsibility, northern institutions should receive the same funding as their southern counterparts plus a given increment to offset higher northern costs. Northern programmes above and beyond the basic teaching responsibility will receive special consideration and funding depending on their northern relevance and provincial priorities. While the estimated north-south cost differential figure of five percent may be questioned, it must be acknowledged that in an era of budget restraint this basic funding scheme is realistic and acceptable to northerners for its favouring equity over efficiency.

In addition to fulfilling the established educational objectives for the south, the author believes that northern higher education should also be a vehicle for regional economic development, cultural development and equality of access. However, in identifying these objectives as uniquely northern the author has overstated the north-south differences. Elements of these "northern objectives", such as instruction, culture and recreation, extension, bilingual education and native peoples programme, are already integrated parts of several post-secondary institutions, both north and south. It is more appropriate, perhaps, that these objectives be "re-emphasized" rather than "introduced" to the northern system.

In any event, Mr. Cameron insists that the realization of these northern goals is only possible by, among other minor proposals, the amalgamation of universities and Colleges of Applied Arts and Technology in northern communities where both types of institutions exist and the establishing of a new advisory council to oversee the resultant institutions.

There are several weaknesses to be noted in these recommendations. Firstly, the creation of a new advisory body, in addition to the two existing councils, will definitely increase the level of bureacracy but not necessarily diminish the present difficulties. Secondly, the potential effects of the proposed merger on costs have not been demonstrated. Cost reduction seems unlikely given the fact that most northern institutions have established separate physical facilities. Thirdly, other alternatives such as the joint development and planning through an integrated extension office suggested for Laurentian and Cambrian have not been fully explored and evaluated. Fourthly, the author has failed to sketch in even the barest details the academic mechanism and implication of amalgamation. While it is imaginative to offer jointly some specific diploma/degree programmes, this concept cannot be generalized to all academic and vocational programmes currently offered by northern universities and CAATs.

A possible result of the proposed merger is that students may perceive these hybrid northern institutions as "second-class". This will further deteriorate the already serious predicted enrolment decline in the north. It should be noted in contrast that the recent White Paper by the Ontario Council on University Affairs only suggests the potential amalgamation of compatible faculties of universities located in proximity to each other. Lastly, the author observes that the situation between the university and CAAT in Thunder Bay "has been a chronicle of conflict and mistrust which no commission, committee, or task force has yet been able to resolve". This may not be typical of all northern communities but it does reflect the general northern institutional relations. In this light, there is no evidence to suggest that Mr. Cameron's recommendations will be either workable or acceptable to northern communities and institutions any more than the numerous previous proposals. This is unfortunate since it's these unrealistic recommendations that negate an otherwise fair and thoughtful assessment of the post-secondary education situation in northern Ontario.

Salary decline

by Robert Léger

L'évolution des traitements des professeurs d'université du Canada, de 1960-61 à 1974-75. Article by Thierry Wils, "conseiller technique", FAPUQ.

In this study, Mr. Wils analyses the long-term evolution of university professors' salaries in Canada from 1960-61 to 1974-75. There are two parts to the document:

I. Les facteurs déterminant l'évolution des traitements.

II. L'évolution des traitements au Canada, 1960-61 à 1974-75.

In the first section, the author deals mostly with two of the factors affecting salaries: price increase and productivity increase. He argues that salary increase should be proportional to the increase in the cost of living and to the increase in

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VACANCIES . POSTES VACANTS

The University of Windsor
Windsor, Ontario

DEAN

Faculty of Engineering

Applications and nominations are invited for the position of Dean of the Faculty of Engineering. This is a renewable term appointment with an initial term of 6 years, beginning July 1, 1979.

The Faculty of Engineering consists of the Departments of Chemical, Civil, Electrical, Industrial and Mechanical Engineering, and Engineering Materials, with a program in Geological Engineering. It has a complement of 42 full-time faculty. Student enrolment is currently 693 under-graduate students and 90 graduate students.

Candidates should have superior academic and professional qualifications, qualify for the rank of professor, and have relevant administrative experience with strong leadership ability. Candidates should be conversant with advanced education in the Canadian context.

Candidates for the position must forward curriculum vitae to:

Dr. D.O. Northwood, Chairman
Selection Committee For The Dean
of Engineering
Dept. of Engineering Materials
University of Windsor
Windsor, Ontario
N9B 3P4

APPLICATIONS WILL BE RECEIVED UNTIL MARCH 15, 1979.

UNIVERSITY OF SASKATCHEWAN

UNIVERSITY LIBRARIAN

Applications and nominations are invited for the position of University Librarian which will become available at the end of June 1979.

The University Librarian is responsible under the Vice-President, Academic, for the administration of the Library and the development of information services for Library users. There are five major libraries and a staff of 160, including 41 professional librarians. The Library collections exceed one million volumes.

Applicants should be graduates with professional qualifications in librarianship and a proven record of superior management ability within academic libraries. Remuneration will be appropriate and competitive.

Nominations and applications with complete resumes will be accepted until March 1, 1979 and should be addressed to:

Dr. M.A. Preston
Vice-President (Academic)
University of Saskatchewan
Saskatoon, Sask. S7N 0W0

CAUT BULLETIN ADS
APRIL ISSUE
Deadline: February 28

ADMINISTRATION

DALHOUSIE UNIVERSITY. **School of Business Administration.** The School of Business Administration, Dalhousie University has an opening for a Director for the Centre of International Business Studies. In addition to administering the Centre, the successful candidate will also be required to undertake certain teaching requirements involving courses offered through the Centre. Salary and Rank are open. Interested candidates are required to send applications (resumes, references, etc.) to Dr. Cecil R. Dipchand, School of Business Administration, Dalhousie University, Halifax, Nova Scotia, Canada, B3H 4H8. Application deadline is February 28, 1979.

UNIVERSITÉ DE MONTRÉAL. **Faculty de médecine.** En conformité avec les statuts de l'Université de Montréal, les postes de directeur des départements de microbiologie et immunologie et de pédiatrie seront ouverts le 1er juin 1979. Salaire en fonction du rang académique. Prime de direction. Bénéfices sociaux. Faire parvenir la demande accompagnée d'un curriculum vitae au docteur Florent Thibert, secrétaire de la Faculté de médecine de l'Université de Montréal, C.P. 6207, Succursale A, Montréal, Québec H3C 3T7, avant le 1er avril 1979.

UNIVERSITY OF TORONTO. **Faculty of Medicine.** 1. Department of Medical Genetics. 2. Professor and Chairman. 3. Ph.D. and / or M.D. with high level of achievement in research and experience in teaching and other academic activities. 4. To administer the department including research, undergraduate and graduate training in the Faculty of Medicine and other Faculties. 5. Commensurate with qualifications and experience. 6. Dr. K. J. Dorrington, Chairman of Selection Committee and Associate Dean, Basic Sciences, Faculty of Medicine, Medical Sciences Building, University of Toronto, Toronto, Canada, M5S 1A8. 7. July 1, 1979. 8. March 1, 1979.

SIMON FRASER UNIVERSITY. **Department of Languages, Literatures and Linguistics.** Joint appointment at the rank of Assistant Professor between the Department of Languages, Literatures and Linguistics and the Faculty of Education. Position is subject to budget constraints. Preference will be given to applicants who are eligible for employment at the time of application. Responsibilities: 1. Teaching in both the Dept. of Languages, Literatures and Linguistics (French, Applied Linguistics and Second Language Teaching) and the Faculty of Education (Pre-Service and In-Service Education). 2. Participation in the administration and teaching of the M.A. — Teaching of French Program. This implies being available in Summer session. 3. Assume directorship of French Language Training Centre. Qualifications: 1. PhD in Foreign Language Education or Applied Linguistics or equivalent. 2. Near native fluency in French. 3. Thorough familiarity with North American trends in language education. 4. Evidence of scholarly work in these fields. 5. Preferably with some administrative experience. 6. Teaching experience in the public schools or experience of having worked with school administrations. Salary subject to negotiation. Starting date: September 1, 1979. Closing date for receipt of applications: February 28, 1979. Curriculum vitae, names of three referees, copies of publications to be sent to Dr. N. J. Lincoln, Chairman, Department of Languages, Literatures and Linguistics, Simon Fraser University, Burnaby, B.C. V5A 1S6.

UNIVERSITY OF GUELPH. **College of Family and Consumer Studies.** Director, School of Hotel and Food Administration. Applications and nominations are invited for the position of Director of the School of Hotel and Food Administration at the University of Guelph. The School was established in 1969 and now has three hundred and fifty undergraduates enrolled in a four year program in hotel and food administration. A research program is being actively developed. The School has a faculty group of eight and is located in a building recently constructed to house the School. It is expected that the candidate will have graduate education in an appropriate discipline and preferably both industry and academic experience. The appointment will be open on October 1, 1979 and is for a term of five years which is renewable. Curriculum vitae and the names of three referees should be sent to Dean J. M. Wardlaw, College of Family and Consumer Studies, University of Guelph, Guelph, Ontario N1G 2W1. Closing date for applications, February 28, 1979. Appointment is subject to final budgetary approval.

UNIVERSITY OF CALGARY. **Department of Computer Science.** Chairman of Department. Applications are invited from persons in the field of computer science who are interested in administering the development of a young and growing department. Applicants should be committed to the achievement of excellence in both undergraduate and graduate teaching, as well as the direction and development of research programs. The salary and length of term of the Chairmanship are negotiable. The effective date of appointment is July 1, 1979. Applicants should submit curriculum vita e and ask three referees to send letters of reference to Dr. T.A. Oliver, Dean, Faculty of Science, The University of Calgary, Calgary, Alberta, T2N 1N4, Canada at the earliest possible convenience.

UNIVERSITY OF NEW BRUNSWICK. **Department of Geology.** Applications are invited for the position of Chairman, Department of Geology, commencing July 1, 1979. The Department of Geology has 14 faculty members, 8 members of staff, about 20 graduate students (M.Sc. and Ph.D.), 40 majors and a freshman enrolment of about 400 students. Instruction and research covers all the traditional fields of geology. The Department is equipped with specialized facilities in X-ray, geochemistry (XRF-AAS) and rock mechanics, and has a hydrothermal laboratory. The successful candidate is expected to show qualities of leadership, administrative ability and to have substantial achievements in earth science research. Duties, in addition to these associated with the administration of the Department will include teaching in the graduate and undergraduate programs. The salary and rank are negotiable; in addition the position presently enjoys an administrative honorarium and a reduced teaching load. Applications with a curriculum vitae and the names of three references should be sent before March 1, 1979 to: Dr. D.G. Brewer, Dean, Faculty of Science, University of New Brunswick, Fredericton, N.B., E3B 5A3.

ANATOMY

UNIVERSITY OF OTTAWA. **Department of Anatomy.** Assistant Professor of Anatomy. Applications are invited for a position of Assistant Professor of Anatomy at the Department of Anatomy, School of Medicine, Faculty of Health Sciences, University of Ottawa, Ottawa, Ontario. The primary teaching responsibility of the position is in the course of Gross Anatomy to medical students. The applicant is expected to have a commitment to research in the morphological sciences or closely allied fields and is expected to participate in the postgraduate teaching program of the Department. Applications should include a

covering letter, curriculum vitae, list of publications and the names of three referees. Applications or inquiries should be directed to: Dr. J. A. Hinke, Professor and Chairman, Department of Anatomy, School of Medicine, Faculty of Health Sciences, University of Ottawa, 275 Nicholas Street, Ottawa, Ontario, Canada K1N 9A9.

ANTHROPOLOGY

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. **Department of Anthropology.** Memorial University of Newfoundland seeks a historical archaeologist for undergraduate and graduate teaching and to develop a research programme in the historical archaeology of Newfoundland. Ph.D. with field experience preferred but others considered depending upon qualifications. Rank and salary open but competitive. Applicants should send complete resume to: Dr. Frank Manning, Head, Department of Anthropology, Memorial University of Newfoundland, St. John's, Newfoundland. Position to begin September 1, 1979, providing funding is available.

UNIVERSITY OF VICTORIA. **Department of Anthropology.** 1979-1980 Sessional replacement position in archaelogy (assistant professor). Ph.D. is preferred. Should be prepared to teach introductory and advanced Method and Theory in Archaeology and introductory General Anthropology. Preference to candidates able to teach archaeology of the Pacific Northwest. Salary according to qualifications. Send applications with vitae and names of three references to Chairman, Department of Anthropology, University of Victoria, Box 1700, Victoria, B.C., V8W 2Y2. Closing date for receipt of applications is March 15, 1979. The University of Victoria reserves the right not to fill this vacancy.

UNIVERSITY OF TORONTO. **Department of Anthropology.** 1. Assistant Professor. Contractually limited term appointment, one year. Contingent upon the availability of funds. 2. Ph.D. required. 3. Physical Anthropologist involving both graduate and undergraduate instruction; undergraduate courses are Introductory Physical Anthropology and Human Skeletal Biology. Graduate course open. 5. Send enquiries, Curriculum Vitae, and names of three referees to Dr. M. R. Kleindienst, Chairman, Department of Anthropology, University of Toronto, Toronto, Ontario, M5S 1A1. 6. July 1, 1979. 7. March 1, 1979.

UNIVERSITY OF LETHBRIDGE. **Department of Anthropology.** 1. One position. 2. Assistant Professor. Terminal appointment, up to one year. 3. Ph.D. in Anthropology. 4. Duties include teaching at the undergraduate level and research. Areas of expertise should include: economic anthropology, cultural ecology, and physical anthropology and archaeology at an introductory level. 5. Salary scale: 1978-79: Assistant Professor — $19,283 - $24,686. 6. Application with curriculum vitae and three references should be submitted to: Dr. T.A. Moore, Chairman, Department of Anthropology, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 3M4. 7. Deadline: 31 March 1979.

ARCHITECTURE

CARLETON UNIVERSITY. **School of Architecture.** Several positions available (rank open) July 1, 1979. Candidates should have B. Arch. and higher degree or equivalent; also teaching and professional work experience. Should be prepared to teach Design Studio and one or more of the following specializations: Theory and History of Environmental Design; Man-Environment Studies; Building Technology; Computer Applications. Send C.V.'s and the names of three referees to: Professor M. R. Coote, Director, School of Architecture, Carleton University, Colonel By Drive, Ottawa, Ontario, K1S 5B6. Closing date: March 1, 1979.

ART

UNIVERSITY OF SASKATCHEWAN. **Department of Art.** The University of Saskatchewan invites applications for a tenure track position at the rank of Assistant Professor. The candidates special areas of competence are to be Medieval and Canadian art, and he or she must be willing to initiate a course in Canadian art within three years; a candidate already with a Ph.D. is preferred. The minimum salary will be approximately $18,000. Applications will be received until 1 March 1979 for an appointment effective 1 July 1979. Write to Professor S. E. Day, Head, Department of Art, University of Saskatchewan, Saskatoon, Canada, S7N 0W0. N.B.: The position is subject to budgetary confirmation.

UNIVERSITY OF TORONTO, SCARBOROUGH COLLEGE. **Division of Humanities. Fine Art.** 1. Assistant Professor (contractually limited term appointment up to three years with possible extension; subject to financing). 2. Ph.D. required; teaching experience preferred. 3. Teaching in the area of modern art and architecture, with competence in Canada and the U.S.A.; surveys and advanced courses in these areas, and an introductory survey of terms and techniques of art and architecture through the ages. 4. Salary in the lower Assistant Professor range. 5. Send curriculum vitae, recommendations and publications to Professor Paul W. Gooch, Chairman, Division of Humanities, Scarborough College, University of Toronto, West Hill, Ontario, M1C 1A4. 6. 1 July 1979. 7. 1 March 1979.

BIOCHEMISTRY

MCMASTER UNIVERSITY. **Department of Biochemistry.** Applications are invited for positions of postdoctoral fellow and research associate to study the mechanism of regulatory enzymes and the role of enzymes in brain function. A strong background in biochemistry is essential and experience in enzymology is preferred. For the postdoctoral fellow the candidate should have obtained the Ph.D. degree in 1979 or should be expecting to obtain it in 1979. The starting stipend is $11,600. For research associate, the candidate must have had two years of postdoctoral experience and the stipend is $13,735. Both positions are available immediately. Send applications to Dr. W. W. Chan, Department of Biochemistry, McMaster University Medical Centre, Hamilton, Ontario L8S 4J9.

THE UNIVERSITY OF WESTERN ONTARIO. **Biochemistry.** The Department of Medicine invites applications for the position of lecturer. The applicant should have a Ph.D., preferably in biochemistry, and some postdoctoral experience. A working knowledge of membrane transport, intestinal absorption or the biological effects of heavy metals would be advantageous. The position involves full-time research with a group investigating the mechanism, specificity and control of intestinal heavy metal transport. Salary is negotiable. Send résumé to Dr. P.R. Flanagan, Department of Medicine, The University of Western Ontario, Room 5-OF18, University Hospital, P.O. Box 5339, Terminal A, London, Ontario N6A 5A5.

UNIVERSITY OF VICTORIA. **Department of Biochemistry / Microbiology.** Applications are invited for the position of Assistant Professor beginning 1 July, 1979. Candidates should have strong teaching and research interests in one or more of the following fields: immunology, protein biochemistry, molecular genetics (recombinant DNA), virology. The successful applicant will be required to teach at the undergraduate and graduate levels and carry on an active research program. A Ph.D. is required and postdoctoral experience desirable. Applications including a curriculum vitae, list of publications, a brief statement of research plans, and the names of three referees who have been requested to send letters of recommendation should be sent to: Prof. A. T. Matheson, Chairman, Department of Biochemistry and Microbiology, University of Victoria, P.O. Box 1700, Victoria, B.C., Canada V8W 2Y2, as soon as possible.

UNIVERSITY OF WESTERN ONTARIO. **Department of Biochemistry.** Applicants are invited from new Ph.D. graduates for the position of Postdoctoral Fellow. Position is available for commencement

UM

THE UNIVERSITY OF MANITOBA

Invites applications and nominations for the position of

Dean of the Faculty of Science

The Faculty of Science at The University of Manitoba has a complement of 180 faculty and 90 support staff. Its twelve departments and units span the Biological, Mathematical and Physical Sciences; they offer a full range of undergraduate Science programs for approximately 2100 students enrolled in the Faculty, courses for a large number of students from other faculties and schools and M.Sc. and Ph.D. programs for about 280 graduate students.

Candidates should have achieved distinction as scholars in a major field of Science, have a commitment to advancing higher education in Science and have strong leadership ability. Relevant administrative experience and knowledge of the Canadian educational system would be assets.

The appointment is expected to commence September 1, 1979 and will be for a renewable term of normally five to seven years.

Please address responses to:

Provost R.A. Johnson,
Chairman,
Selection Committee for Dean of the Faculty of Science,
Room 202, Administration Building,
The University of Manitoba,
Winnipeg, Manitoba,
Canada, R3T 2N2.

Applications, nominations and suggestions will be received until March 15, 1979.

LUTHER COLLEGE

a federated college of
The University of Regina
Regina, Saskatchewan, Canada

Invites applications for possible appointments, immediate and future, in the following areas:
Biology: Emphasis on human ecology
Economics: Courses in social policy income distribution; global concerns
Psychology: Social psychology and/or phenomenological psychology
Sociology: Sociology of religion; general areas
It is anticipated that either a biology or economics appointment will be effected for September, 1979. Minimally a one-year psychology appointment will also be made for that date. A sociology appointment may be made. All the positions require the instructors to teach introductory courses as well as the concentration areas.
Qualifications: Ph.D. or equivalent preferred
Primary assignment: teaching undergraduates. Other duties in accordance with college goals. On-going research.
Salary and rank: commensurate with qualifications and experience
Salary floors: Lecturer: $14,081
Assistant Professor: $17,932
Associate Professor: $23,534
Regular Luther appointments are ordinarily, but not necessarily, in the tenure stream.
Applications including curriculum vitae and the names of three references are to be sent to **Dr. Roland E. Miller, Academic Dean, Luther College, University of Regina, Regina, Saskatchewan, Canada S4S 0A2.** Closing date for receipt of applications: date positions are filled.

between April I and October 1, 1979. The area of interest involves the control and partial purification of steroid sulfatases, sulfotransferases and glucuronyltransferases. A prior knowledge of steroids would be valuable and a strong interest in enzymology is necessary. The salary is at current MRC rates commencing at $11,600. Write to Dr. R. Hobkirk, Room 3-EN-2, University Hospital, London, Ontario, N6A 5A5.

BIOLOGY

MCGILL UNIVERSITY. **Biology Department.** Post Doctorate or Research Associate in Fish Ecology. Applications are solicited from individuals with expertise in fish ecology or closely related fields. Marine and / or larval fish experience desirable but not essential. Successful applicant will coordinate study of interspecific interraction among larval fishes in the St. Lawrence estuary. Tenure up to three years. Forward curriculum vitae and two letters of reference by March 1, 1979 to: Dr. W. C. Leggett, Biology Department, McGill University, 1205 McGregor Avenue, Montreal, P.Q. H3A 1B1.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. **Department of Biology.** Applications are invited for a position open at senior rank, in the area of Fisheries Biology. Candidates must demonstrate a strong record of research and publication in Fisheries, and a successful background in supervision of fisheries research at the M.Sc. and Ph.D. levels. The successful candidate will play a key role in development of a new fisheries program. Applicants should submit a curriculum vitae and the names of three referees. Applications close on March 31st, 1979. Dr. G.R. South, Head, Department of Biology, Memorial University of Newfoundland, St. John's, Newfoundland. A1B 3X9, Canada.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. **Department of Biology.** Applications are invited for a position open at the rank of Assistant Professor, in the area of Aquatic Zoology. Enquiries are especially welcome from candidates with specialization in any of the following areas: marine and freshwater fishes; limnology; planktology; fish population dynamics. Applicants should submit a curriculum vitae together with the names of three referees. The applications close on March 31st, 1979. Dr. G. R. South, Head, Department of Biology, Memorial University of Newfoundland, St. John's, Newfoundland, A1B 3X9, Canada.

UNIVERSITY OF WINNIPEG. **Department of Biology.** Probable sessional appointment at the level of Assistant Professor to teach Plant Kingdom; Phycology, Plant Physiology and Plant Anatomy. Teaching experience desirable. Duties to begin September 1st (or earlier by negotiation). Send curriculum vitae and names of two referees to Dr. R. A. Woods, Chairman, Biology Department, University of Winnipeg, Winnipeg, Manitoba, R3B 2E9. Closing date February 28, 1979.

UNIVERSITY OF WINNIPEG. **Department of Biology.** Probable sessional appointment for an instructor to teach laboratory classes in General Biology, Human Physiology (for nurses) plus other duties. Experience advantageous. Duties to begin September 1st (or earlier by negotiation). Send curriculum vitae and names of two referees to Dr. R. A. Woods, Chairman, Biology Department, University of Winnipeg, Winnipeg, Manitoba, R3B 2E9. Closing date February 28th, 1979.

UNIVERSITY OF WINNIPEG. **Department of Biology.** Probable sessional appointment at the level of Assistant Professor to teach Higher Invertebrates, Human Physiology (Science credit course) plus other teaching duties. Teaching experience desirable. Duties to begin September 1st, 1979 (or earlier by negotiation). Send curriculum vitae and the names of two referees to Dr. R. A. Woods, Chairman, Biology Department, University of Winnipeg, Winnipeg, Manitoba, R3B 2E9. Closing date February 28th, 1979.

CONCORDIA UNIVERSITY. **Department of Biological Sciences.** A research fellowship is available for a person with Ph.D. in Plant Biochemistry and with strong background in enzymology to assist in isolation and characterization of phenolic enzymes. The position will be for one or two years, starting April 1979 and the stipend is $12,000. Candidates should forward CV and three letters of reference to Dr. R.K. Ibrahim, Department of Biological Sciences, Concordia University, Montreal H3G 1M8 by February 28, 1979.

DALHOUSIE UNIVERSITY. **Department of Biology.** Faculty position: Forest Resource Ecologist, in Department of Biology with participation in the programme of the Institute for Resource and Environmental Studies. Rank: Assistant or Associate Professor level. The individual appointed should be capable of teaching applied plant ecology and forest and land resource evaluation and management to undergraduates and graduate students and of supervising graduate students in both the Master of Environmental Studies and the Master of Science programmes. Research interests in Renewable Energy and Forest Management and Conservation, and in Forest Ecosystem Nutrient cycling. Ability to relate research to the needs of government, Industry and the Community. Submit C.V. and 3 letters of reference by 15 March 1979 to Chairman, Department of Biology, Dalhousie University, Halifax, Nova Scotia, Canada, B3H 4J1.

CONCORDIA UNIVERSITY. **Department of Biological Sciences.** A research fellowship is available for a person with Ph.D. in Plant Biochemistry and with strong background in enzymology to assist in isolation and characterization of phenolic enzymes. The position will be for one or two years, starting April 1979 and the stipend is $11,000. Candidates should forward CV and three letters of reference to Dr. R. K. Ibrahim, Department of Biological Sciences, Concordia University, Montreal, Quebec, H3G 1M8, by February 28, 1979.

UNIVERSITY OF BRITISH COLUMBIA. **Department of Zoology.** Applications are invited for 3 positions at the Assistant Professor level to teach: (1) Parasitology, (2) Introductory Biology, (3) Neurophysiology. Qualifications include a Ph.D., with demonstrated ability in effective teaching: the appointee for Introductory Biology must be capable of making a positive contribution to teaching large first year classes. The successful applicants will be expected to develop strong research programmes. Upper level undergraduate teaching, and graduate student teaching and supervision are required. Salary will be commensurate with experience and duties. Curriculum vitae and the names of 3 references should be sent to Dr. G.G.E. Scudder, Head, Department of Zoology, University of British Columbia, 6270 University Boulevard, Vancouver, B.C. V6T 1W5. Appointment effective 1 July 1979. Closing date when position filled.

UNIVERSITY OF ALBERTA. **Department of Botany.** Applications are invited for a 3 year term position for the position of lecturer / laboratory coordinator commencing 1 September, 1979. Responsibilities include teaching and coordinating in the environmental section of the Introductory Biology Programme and coordination of laboratories in an introductory biology course. Applicant must possess an M.Sc. in plant ecology or equivalent. Salary commensurate with experience (basic $14,500). Applications, including a curriculum vitae and three letters of reference, should be sent, by 15 February, 1979, to Mrs. Joyce Kurie, Administrative Assistant, Department of Botany, University of Alberta, Edmonton, Alberta, T6G 2E9.

BUILDING STUDIES

CONCORDIA UNIVERSITY. **Building Engineering. Post-doctoral positions within the Centre for Building Studies of Concordia University.** A number of post doctoral positions are available in the Centre for Building Studies in the area of Building Environment, Building Science, Building Structures and Construction Management. Appointments are for a one year period with an annual salary in the range of $10,800 to $11,800. Interested candidates should forward a complete resumé to: Dr. Paul Fazio, Director, Centre for Building Studies, Concordia University, 1455 de Maisonneuve Blvd. West, Montreal, Quebec, Canada. H3G 1M8.

BUSINESS ADMINISTRATION AND COMMERCE

FRANCIS XAVIER UNIVERSITY. **Department of Business Administration.** Applications are invited for several faculty positions. Duties involve undergraduate teaching and research. Ph.D. preferred but M.B.A. and relevant experience will be considered. Rank and salary dependent on qualifications. Teaching areas include Accounting, Finance, Business Policy, Industrial Relations and General Management and preference will be given to candidates with a competence in more than one area. Appointments will be effective August 1, 1979. Applications should be sent to: L. T. Gallant, Chairman, Department of Business Administration, St. Francis Xavier University, Antigonish, Nova Scotia, B2G 1C0.

UNIVERSITY OF NEW BRUNSWICK. **Saint John Campus. Division of Administration.** Applications are invited for the following three positions: a tenurable position in Financial Accounting at the Associate or Assistant level; a sabbatical leave replacement in Management Accounting at the Assistant level; and a leave replacement in the Management field at the Assistant level. Duties of these positions include undergraduate teaching and research. Preference will be given to candidates with a Ph.D. or Ph.D. in progress. Minimum qualifications for the tenurable position would include an M.B.A. and a professional accounting designation. Rank and salary will be based on the candidate's qualifications and experience. Appointment effective July 1st, 1979. Applications will be accepted until the positions are filled. Please address applications to the Chairman, Division of Administration, University of New Brunswick, Saint John, N.B., P.O. Box 5050, E2L 4L5.

WILFRID LAURIER UNIVERSITY. **Faculty of Business and Economics.** Applications are invited for teaching positions in the areas of Accounting and Business Policy. Qualifications: Ph.D. or Ph.D. candidates. Duties include graduate or undergraduate teaching. Applications will be accepted until positions are filled, and are subject to budget approval. Please send applications to: Dr. T. F. Cawsey, Associate Dean of Business, School of Business and Economics, Wilfrid Laurier University, Waterloo, Ontario, Canada, N2L 3C5.

UNIVERSITY OF ALBERTA. **Faculty of Business Administration and Commerce.** Applications are invited for faculty position in Personnel. Ph.D. or equivalent is desirable. Both men and women are invited to apply. Salary and rank depend on qualifications: Applications welcome until position is filled. Appointments normally effective July 1. Send resume to: Dr. Roger S. Smith, Dean, Faculty of Business Administration and Commerce, University of Alberta, Edmonton, Alberta, T6G 2G1.

UNIVERSITY OF NEW BRUNSWICK. **Division of Administration.** Saint John Campus. Applications are invited for the following three positions: a tenurable position in Financial Accounting at the Associate or Assistant level; a sabbatical leave replacement in Management Accounting at the Assistant level; and a three year leave replacement in the Management field at the Assistant level. Duties of these positions include undergraduate teaching and research. Preference will be given to candidates with a Ph.D. or Ph.D. in progress. Minimum qualifications for the tenurable position would include an M.B.A. and a professional accounting designation. Rank and salary will be based on the candidate's qualifications and experience. Appointment effective July 1st, 1979. Applications will be accepted until the positions are filled. Please address applications to the Chairman, Division of Administration, University of New Brunswick, Saint John, N.B. P.O. Box 5050, E2L 4L5.

CARLETON UNIVERSITY. **School of Commerce.** Applications are invited for Assistant/Associate rank in the following areas of interest; (i) Marketing, (ii) Finance, (iii) Systems Analysis / Data Processing. Preference will be given to candidates with a secondary teaching interest in Quantitative Methods or Business Policy. Appointment effective July 1, 1979. Qualifications required: Ph.D. (Appointments may be considered in exceptional circumstances for individuals who wish to consider academic experience before embarking on a Ph.D. program.) Applications should be sent to Dr. W. M. Lawson, Chairman, Recruiting Committee, School of Commerce, Carleton University, Ottawa, Ontario, K1S 5B6.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. **School of Business Administration and Commerce.** A number of faculty positions exist in the following areas: Accounting, Finance, Quantitative Methods, General Management, Business and Society, Business Policy. Positions will involve teaching in both B. Comm. (cooperative) and M.B.A. programs. Salary and rank are competitive and negotiable. Send application, curriculum vitae, references and other appropriate documentation to: Dr. James G. Barnes, Director, School of Business Administration and Commerce, Memorial University of Newfoundland, St. John's, Newfoundland, A1N 3X5.

UNIVERSITY OF NEW BRUNSWICK. **School of Administration.** Applications are invited for the following undergraduate teaching positions: Accounting, Finance, Management - Organizational Behaviour, Marketing, and Policy. Qualifications required are Ph.D. or Ph.D. candidate. Duties involve undergraduate teaching and research. Rank and salary are based on the candidate's qualifications and experience. Appointments effective July 1, 1979 (possibly January 1, 1979). Direct inquiries to the Director, School of Administration, University of New Brunswick, Fredericton, New Brunswick, E3B 5A3.

ALGOMA UNIVERSITY COLLEGE. **Department of Commerce and Administration.** One, possibly two, full-time appointments in Commerce and Administration commencing July 1, 1979. Applicants should have M.B.A., C.A., and/or Ph.D., or D.B.A. Subject areas to include upper level undergraduate accounting courses, Marketing Management, Business Finance, Business Organization and Management. Other areas such as Business Policy and Personnel will be considered. Rank and salary open and competitive. Applications, official transcripts and curriculum vitae should be accompanied by the names of three references, and forwarded to Dr. M. A. Rajput, Chairman, Social Sciences Division, Algoma University College, Sault Ste. Marie, Ontario, P6A 2G4.

UNIVERSITY OF WINDSOR. **Faculty of Business Administration.** Assistant or Associate Professor of Marketing. Applications are invited for two tenure track positions at the assistant or associate level beginning in July or September 1979. A completed Ph.D. is required for the associate level, while near completion will be considered for the assistant position. Interested candidates will be expected to teach in at least one of the areas of marketing research, physical distribution, channels of distribution, or sales management. Salary is highly competitive and is dependent on qualifications. Interested candidates should send resumé to Dr. A. J. Faria, Chairman of Marketing, Faculty of Business Administration, University of Windsor, Windsor, Ontario, Canada N9B 3P4. The Faculty of Business offers the B.A. and M.B.A. degrees and has nearly 1,500 students.

UNIVERSITY OF WINDSOR. **Faculty of Business Administration.** 1. Rank open, Financial Accounting, Marketing Quantitative and Behavioural, Organization Theory and Behaviour, Labour and Industrial Relations. All openings are subject to availability of funds. 2. Ph.D. or advanced stage in Doctoral Studies. 3. Teaching undergraduate and M.B.A. Level Courses. 4. Competitive. 5. Dr. J. Alex Murray, Acting Dean, Faculty of Business Administration, University of Windsor, Windsor, Ontario, N9B 3P4. 6. July 1, 1979 or September 1, 1979. 7. When positions filled.

McMASTER UNIVERSITY. **Faculty of Business.** Applications are invited for either a faculty or a visiting position in Management Information Systems. Candidates should have the doctorate completed and, preferably, should also have some teaching and research experience. The successful candidate will be expected to make a strong contribution to research and to the Ph.D. program in management information systems. Duties will also include B. Comm. and/or M.B.A. teaching. Salary and rank

$$$$$$$$$$$$$$$$$$$$ GUIDE DE L'IMPÔT $$$$$$$$$$$$$$$$$$$$ SUR LE REVENU $$$$$$$$$$$$$$$$$$$$ 1978 A.C.P.U.

Notes préliminaires

1. Toutes les références se rapportent à la loi de l'impôt sur le revenu sauf indication contraire.
2. Les chiffres entre crochets 'Français' (« ») renvoient aux articles correspondants de la loi d'imposition du Québec.
3. Pour raisons d'ordre constitutionnel, le Québec ne retient pas d'impôt sur le revenu locatif ou autre des non-résidents; il n'existe donc pas d'articles correspondants dans la loi d'imposition du Québec.
4. Il n'existe pas de traité qui lie le Québec à un pays étranger. Cependant, l'article 386 de la loi d'imposition du Québec et le Règlement d'application 386.1 donnent effet au Québec aux principes incarnés dans les traités signés par le Canada. Par conséquent, le revenu des non-résidents exempté en vertu d'un traité canadien n'est pas soumis à l'impôt sur le revenu du Québec.
5. Référence est faite aux bulletins d'interprétation (qui ne sont pas techniquement obligatoires pour le gouvernement, mais qui seront probablement suivis par ce dernier) publiés par le Ministère du Revenu national, (Impôt), selon le numéro de publication du ministère, soit "IT-221"

Conséquences fiscales de la distinction entre revenu tiré d'un emploi et revenu tiré d'une entreprise.

La loi de l'impôt sur le revenu ne renferme pas de définition statutaire du "revenu", mais l'article 3 « 23 » indique les règles essentielles servant à calculer le revenu du contribuable au cours d'une année d'imposition. La loi distingue entre les diverses sources de revenu. Pour la majorité des professeurs d'université, la distinction la plus importante s'applique au revenu d'une charge ou d'un emploi par rapport à celui d'une entreprise ou d'une profession.

Le revenu d'un emploi comprend le salaire et toute autre rémunération reçue par le professeur en échange de ses services, selon son contrat de travail (articles 5 et 6 « 26, 27 et 30-34 »). L'article 8 « 53-73 » indique les dépenses déductibles du revenu d'un emploi. Les déductions permises du revenu d'un emploi sont expressément limitées à celles indiquées dans cet article (paragraphe 8(2) « 53 »).

Le revenu d'une entreprise (article 9 « 74-76») comprend toute rémunération reçue par un professeur pour services professionnels rendus en vertu d'un "contrat d'entreprise".

Le professeur peut avoir avantage à tenir compte de la distinction entre ces deux sources de revenu (détaillées ci-après), car elles présentent des différences importantes quant aux déductions admissibles. Dans le cas du revenu d'un emploi, seules les déductions statutaires très limitées sont permises; par contre, le bénéficiaire d'un revenu d'entreprise peut généralement déduire toute dépenses raisonnable engagées pour gagner ce revenu, sauf les dépenses au compte de capital. L'amortissement du coût en capital est d'ordinaire déductible sous la forme d'amortissements du coût en capital.

Revenu d'un emploi

Le salaire reçu par le professeur en rémunération de ses fonctions professorales et administratives est normalement classé comme revenu d'un emploi. A ce revenu doivent s'ajouter les avantages sociaux qui constituent une rémunération additionnelle ou supplémentaire de services rendus. En général, ces avantages ne sont pas des paiements en argent.

Le Bulletin d'interprétation IT-71R énumère les divers genres habituels d'avantages sociaux et indique si la valeur doit, ou non, en être comprise dans le revenu de l'employé.

On peut obtenir de l'ACPU ou de l'UAPUO des études sur les implications fiscales des Régimes d'assurance-salaire (incapacité de longue durée) en particulier et sur les avantages sociaux en général.

Voici des exemples des avantages sociaux *qui doivent figurer dans le revenu* d'un emploi;
a) primes versées par une université à l'employé ou pour son compte à des régimes provinciaux d'assurance-hospitalisation ou d'assurance-maladie;
b) allocations pour frais personnels ou de subsistances reçues de l'employeur;
c) coût de l'utilisation personnelle par l'employé d'une automobile appartenant à l'employeur ou louée par lui;
d) indemnités reçues pour perte de salaire d'un régime d'assurance maladie ou invalidité maintenue par l'université (consulter l'étude susmentionnée pour plus amples détails);
e) partie d'une prime payee par l'université pour une assurance collective sur la vie en excédent de $25,000;
f) intérêt imputé sur des prêts sans intérêt ou à faible taux d'intérêt consentis par l'employeur à un employé dans certaines circonstances après 1978. L'intérêt sur les prêts domiciliaires demeure un avantage non imposable dans la plupart des cas (article 80.4) (IT 421, alinéa 4). Au Québec, les modalités s'appliquent pour l'année 1978 et suivantes. De plus, contrairement à la Loi fédérale le prêt domiciliaire n'est pas exempté.

Voici des exemples des avantages sociaux qui *n'ont pas à figurer dans le revenu:*
a) transport lorsque l'employeur juge avantageux de fournir des véhicules pour transporter ses employés à partir d'endroits de ramassage jusqu'au lieu d'emploi où, pour des raisons de sécurité ou autres, on n'aime pas ou il n'est pas pratique que viennent des véhicules publics et privés;
b) coût de la prestation par l'employeur d'installations récréatives au bénéfice des employés à titre gratuit ou moyennant un prix nominal;
c) cotisations de l'employeur à un régime privé de soins de santé, y compris les soins dentaires, établi au bénéfice des employés ainsi que la valeur des prestations reçues du régime;
d) frais de déménagement payés ou remboursés à l'employé dans certaines circonstances réglementaires;
e) remise des frais de scolarité à l'égard de cours suivis par un professeur ou des membres de sa famille, sauf son conjoint, si l'université n'émet pas de reçus à leur égard;
f) valeur du stationnement gratuit assuré aux employés;
g) remboursement des frais d'assistance à un congrès lorsque l'employeur demande à l'employé d'y assister dans le cadre de son emploi;
h) cotisations de l'employeur à un régime d'assurance-salaire pour le compte des employés. (Voir l'étude susmentionnée pour de plus amples détails.)

Revenu d'une entreprise

De nombreux professeurs travaillent à titre d'entrepreneurs indépendants pour une université ou pour d'autres institutions en vertu d'un *contrat d'entreprise,* et non d'un contrat de service. Le revenu d'un tel travail n'est pas un revenu tiré d'un emploi. En plus de tirer des revenus de droits d'auteur, de consultations, de cours, d'émissions de radio ou de télévision; ces divers revenus sont habituellement considérés comme revenu d'entreprise. Lorsqu'il établit son revenu imposable, le professeur peut déduire de ce revenu d'entreprise certaines dépenses admissibles.

En plus d'exercer des charges professorales ordinaires, le professeur peut enseigner des cours spéciaux d'été ou du soir ou enseigner dans une école d'études supérieures. Ce sont les circonstances de chaque cas qui permettent de déterminer s'il existe un contrat de travail (contrat d'emploi) ou un contrat d'entreprise (contrat d'affaires). Revenu Canada, récemment appuyé par les tribunaux, a conclu que des services d'enseignement spéciaux sont souvent assurés en vertu d'un contrat d'emploi, surtout si des matières sont enseignées dans les mêmes conditions et la même discipline que dans le cas de cours du programme d'études normal.

Dans certains cas, cependant, des cours ne valant pas de crédits peuvent s'enseigner en dehors d'un contrat d'emploi. Voici certaines des conditions qui tendent à prouver l'existence d'un contrat d'entreprise pour l'enseignement de cours ne valant pas de crédits:
a) Il y a généralement *contrat de travail (emploi)* lorsque la personne pour qui les services sont exécutés a le droit de déterminer la somme, la nature et l'orientation du travail à faire et la façon de l'accomplir. Il y a *contrat d'entreprise (non-emploi)* lorsque l'intéressé est engagé pour réaliser un objectif prescrit et bénéficie de toute la liberté qu'il lui faut pour atteindre le résultat souhaité (d'après le Bulletin d'interprétation IT-312, alinéa 4).
b) En vertu d'un contrat d'entreprise, la latitude et la responsabilité du professeur quant aux dépenses qu'il peut effectuer pour fournir les services sont clairement définies dans un contrat officiel ou dans un échange de correspondance.
c) L'utilisation des services d'autres personnes par le professeur qui s'acquitte de ses obligations contractuelles est la preuve d'un contrat d'entreprise.
d) Un contrat d'entreprise peut se supposer lorsque le professeur fournit des services à plus d'une université ou institution.

Beaucoup d'universités passent des contrats avec les professeurs pour ces services supplémentaires. Si une université rémunère de tels services sur présentation d'une facture ou déclare ce revenu sur une formule T4A « TP4A » plutôt que sur la formule T4 « TP4 », c'est signe que l'université ne considère pas ces paiements comme revenu d'entreprise. Du point de vue administratif, il sera beaucoup plus facile ainsi au professeur de les déclarer comme revenu d'entreprise, bien que la juste caractérisation juridique de la relation entre le contribuable et le payeur ne s'en trouve pas changée.

Le professeur qui enseigne un cours spécial dans une université, mais au nom d'une institution extérieure, ferait bien de se faire payer directement par cette dernière. Si la rémunération passe par la paye de l'université et est déclarée sur la formule T4 « TP4 », il aura peut-être de la difficulté à convaincre le bureau de district de l'impôt qu'il s'agit d'un revenu d'entreprise. Ses chances de succès seront meilleures si le revenu est payé par la voie des comptes à payer après réception d'une facture de sa part ou déclaré sur la formule T4A « TP4A ». De nombreuses universités le font sur demande.

De toute évidence, le professeur a avantage à faire reconnaître comme tels tous ses revenus d'entreprise, car cela lui permet de déduire plus de dépenses. Le professeur, par exemple, qui maintient un bureau chez lui afin de gagner un revenu d'entreprise peut déduire de ce revenu les dépenses du bureau. (Voir Frais de Bureau, ci-dessous).

Toutefois, étant donné qu'aucun impôt n'aura été déduit à la source sur ses revenus, il ne doit pas perdre de vue qu'il lui faudra régler ses comptes avec le fisc au moment de la production de sa déclaration d'impôt. En outre, à moins que l'impôt soit déduit à la source sur au moins les trois quarts du "revenu net" (d'une année d'imposition) du contribuable, ce dernier est tenu de faire des versements trimestriels. (Voir la Déclaration personnelle d'impôt sur le revenu pour le calcul du "revenu net".) (Paragraphe 156(1) « 754 »).

Déductions du revenu d'un emploi

L'article 6 « 30-40 » porte sur les avantages sociaux découlant d'un emploi. La valeur de certains de ces avantages doit figurer dans le revenu aux fins de l'impôt tandis que celle d'autres peut en être exclue (IT-71R).

L'article 8 « 53-73 » énumère les dépenses qui peuvent se déduire du revenu. Le paragraphe 8(2) « 53 » formule la limitation générale portant qu'aucune autre déduction n'est permise en dehors de celles autorisées par l'article 8. Par contre, toutes les dépenses raisonnables connexe au gain d'un revenu d'entreprise ou d'honoraires professionnels peuvent se déduire aux fins de l'impôt sur le revenu, sauf les dépenses de capital qui sont généralement amortissables. Les dépenses qui peuvent se déduire du revenu d'un emploi comprennent les suivantes:

a) *frais professionnels* — déduction permise à tous les employés à concurrence de 3% du revenu d'un emploi et d'une limite de $250 ($500 au Québec) (alinéa 8(1) (a) « 54 »).

b) *frais d'avocats* — l'employé peut déduire les frais d'avocats qu'il a supportés pour se faire payer son salaire par un employeur ou un ancien employeur (alinéa 8(1) (b) « 71 »).

c) *caisse d'échange de professeurs* — le con-

tribuable peut déduire les cotisations qu'il a versées au cours de l'année, jusqu'à concurrence de $250, à une caisse établie par l'Association canadienne d'éducation au bénéfice des enseignants d'autres pays du Commonwealth qui se rendent au Canada dans le cadre du programme d'échange d'enseignants (alinéa 8(1)(d) « 73 »).

d) *frais de déplacement* — supportés par l'employé.

i) qui doit habituellement exercer les fonctions de sa charge en dehors du lieu de l'entreprise de son employeur ou dans différents lieux, ou

ii) qui est tenu par contrat d'acquitter les frais de déplacement nécessités par l'exécution de ses fonctions et dont il n'est pas remboursé par une allocation pour frais de déplacement.

Des cas de cette nature pourraient se réaliser lorsque le professeur participe à un programme d'échange ou doit se déplacer entre deux campus à ses frais (alinéa 8(1)(h) « 57 »).

S'il y a utilisation d'une automobile, l'intérêt et l'amortissement du coût en capital peuvent figurer dans les frais de déplacement (alinéa 8(1)(j) « 58 »). (IT-272) (Voir "Frais d'automobile" ci-après). Au Québec, depuis 1978, les intérêts payés sur un emprunt fait pour l'achat d'une automobile sont déductibles si l'automobile est *uniquement utilisée dans l'accomplissement de ses fonctions.* Puisqu'une automobile sert habituellement aussi pour usage personnel, les intérêts deviennent donc non-déductibles.

e) *cotisations et autres frais professionnels*

i) les cotisations aux associations professionnelles ne sont pas déductibles du revenu d'un emploi, sauf si l'adhésion est une obligation d'emploi contractuelle ou si le paiement des cotisations est nécessaire pour maintenir un statut professionnel reconnu par la loi. Si l'adhésion constitue une dépense nécessaire au gain d'un revenu d'entreprise ou professionnel, les cotisations en sont déductibles (alinéa 8(1)(i) (i) « 62a »).

ii) les cotisations à une association de professeurs sont considérées comme des cotisations syndicales et sont déductibles du revenu d'un emploi (sous-alinéa 8(1)(i)(iv) « 62b »).

iii) le loyer d'un bureau, le salaire d'un adjoint ou d'un suppléant et le coût des fournitures, si ces dépenses sont à payer par l'employé en vertu de son contrat d'emploi (alinéa 8(1)(i); sous-alinéas (ii) et (iii) « 72 »).

f) *primes d'assurance-chômage* (alinéa 8(1) (k) « 64a »).

g) *cotisations au Régime de pensions du Canada ou au Régime de rentes du Québec* (alinéa 8(1) (L) « 64b »).

h) *cotisations d'un régime enregistré de pension* (REP) — jusqu'à $3,500 par année à l'égard des services courants, si l'employeur retient les cotisations (alinéa 8(1) (m) « 64c, 65 »). Si la cotisation contractuelle de l'employé au régime est inférieure à $3,500, la différence peut se composer en tout ou en partie de cotisations volontaires, si le régime l'autorise.

Indépendamment de ce qui précède, le professeur peut, si son régime le permet, verser des cotisations volontaires additionnelles d'au plus $3,500 par année à l'égard des services antérieurs (paragraphe 8(7) « 67 »). Ce droit de cotiser le supplément de $3,500 ne s'étend qu'aux professeurs et n'est pas disponible si le professeur cotise à un régime enregistré d'épargne-retraite.

En d'autres termes, le professeur peut verser jusqu'à $7,000 par année à son régime enregistré de pension, à condition de ne pas cotiser la même année à un régime enregistré d'épargne-retraire. Même s'il ne cotise qu'un dollar à un tel régime, la limite totale de ses cotisations aux régimes de pension et d'épargne baisse à $3,500.

i) *cotisations à un régime enregistré d'épargne-retraite* (REER) un professeur peut, pour suppléer la pension de son université, souscrire à un régime enregistré d'épargne-retraite. Les cotisations sont déductibles jusqu'à concurrence du moins élevé des deux montants suivants: 20% du revenu gagné et $3,500; moins le montant de ses cotisations à un régime enregistré de pension, y compris les cotisations volontaires à l'égard des services courants, le cas échéant.

Il faut signaler ici encore que le versement d'une cotisation, si petite soit-elle, à un régime enregistré d'épargne-retraite annule le droit du professeur de cotiser un supplément de $3,500 à son régime enregistré de pension à l'égard des services passés et sa limite totale relative aux cotisations au RER et au REER est fixée à $3,500. Dans le cas de celui qui ne cotise pas à un régime enregistré de pension, la limite est le montant le moins élevé de 20% du revenu gagné et de $5,500 (paragraphe 146(5) « 684 ». Le contribuable peut déduire les cotisations à un régime enregistré d'épargne-retraite au nom de son conjoint. En pareil cas, les limites précitées s'appliquent au total des cotisations aux deux régimes (paragraphe 146(5.1) « 684a »).

Dans le passé, certains contribuables ont versé des fonds déductibles à un REER de leur conjoint qui était immédiatement désenregistré, ce qui faisait passer les fonds dans le revenu du conjoint. En vertu des modifications récentes, les sommes versées dans l'année et les deux années précédentes à un régime du conjoint doivent figurer dans le revenu du cotisant si elles sont retirées au cours de l'année (paragraphes 146(8.3), (8.5), (8.6), et (8.7) « 689c, 689e, 689f, 689g »).

L'intérêt de l'argent emprunté pour financer des cotisations à un régime enregistré d'épargne-retraite est déductible du revenu. L'intérêt sur les emprunts connexes aux primes versées à un régime du conjoint n'est pas déductible. La valeur accumulée d'un régime peut se convertir en pension le ou après le 60e anniversaire de naissance du rentier et à ou avant la fin de l'année où il atteint 71 ans. Le genre et la souplesse des pensions disponibles ont récemment été améliorés, sous réserve de certaines dispositions transitoires.

Un article intitulé *L'impôt sur le revenu et la personne âgée* et publié par l'ACPU peut s'obtenir sur demande de l'ACPU et de l'UAPUO. L'article porte sur un certain nombre de questions d'impôt sur le revenu d'intérêt particulier pour les personnes qui approchent de l'âge de la retraite ou l'ont atteint.

j) *cotisations à un régime enregistré d'épargne-logement* (REEL) — le contribuable qui n'est pas propriétaire peut contribuer à un régime enregistré d'épargne-logement jusqu'à $1,000 par an, avec un maximum absolu de $10,000. Le participant au régime doit être résident canadien et ne peut se prévaloir qu'une seule fois d'un régime de ce genre. Les versements sont déductibles aux fins de l'impôt sur le revenu et le revenu tiré de ce régime n'est pas soumis à l'impôt. Les retraits ne sont pas imposés s'ils servent à acheter une maison.

Voici des modifications applicables au REEL après le 31 décembre 1977:

i) si le contribuable réside avec son conjoint et si le conjoint possède un logement, le contribuable ne peut participer à un REEL (alinéas 146.2(2) (g) « 693d » et (5) « 693o »).

ii) le droit d'acheter des meubles avec des fonds REEL non imposables a été supprimé (paragraphe 146.2(6) « 693q »).

iii) un REEL ne peut se détenir durant plus de 20 ans (paragraphe 146.2(8.1) « 693x »).

Les sommes investies dans un REEL échappent totalement à l'impôt si elles servent à leur fin réglementaire contrairement au cas du REER alors que l'impôt est simplement différé.

Si les fonds du REEL ne sont pas finalement employés à leur fin projetée, le contribuable peut les retirer sous réserve d'imposition ou les utiliser à l'achat d'une rente à versements invariables (article 146.2 « 693a-693w »). Le droit de transférer les fonds d'un REEL à un REER a été supprimé.

k) *les frais de déménagement* ne sont déductibles que du revenu du nouvel emploi et si le contribuable s'est rapproché d'au moins 25 milles du nouveau lieu de travail. Les frais peuvent comprendre: voyage, transport et emmagasinage des effets ménagers, logement et repas temporaires, résiliation d'un bail et frais de vente de l'ancienne résidence et, dans certains cas, le coût d'achat d'une nouvelle maison (alinéa 62(3) (f) « 319f »). Il existe une limite de 15 jours en ce qui concerne le logement et les repas temporaires et ne sont admis que les déplacements au Canada (article 62 « 316-319 »). (Voir la brochure "Frais de déménagement" et l'IT-178 de Rev. Can. Imp.).

l) *les frais de garde d'enfants* sont normalement déduits par la mère seulement, mais le père peut y avoir droit dans certaines circonstances. Les frais de gardienne, de garderie, de pensionnat et de colonie de vacances sont admis en déduction s'ils répondent aux règles prescrites et s'inscrivent dans les limites spécifiées. Les frais doivent être engagés pour permettre au contribuable d'exercer un emploi ou une activité commerciale. Seuls les contribuables résidents du Canada, y compris ceux réputés l'être aux termes de la loi de l'impôt (alinéa 250(1) (2)) sur le revenu, peuvent déduire des frais de garde d'enfants. Les non-résidents temporairement en congé à l'étranger ne le peuvent pas, même s'ils sont réputés employés au Canada et payent impôt sur leur gain canadien. En d'autres termes, les professeurs en congé sabbatique qui demeurent résidents du Canada peuvent déduire des frais de garde d'enfants, mais ceux qui deviennent des non-résidents ne le peuvent pas. (Article 63 « 320-325 »). (Voir Rev. Can. Imp., brochure *Frais de garde d'enfants.*)

Déductions du revenu d'entreprise

En principe, le contribuable peut déduire de son revenu d'entreprise les dépenses engagées pour gagner ce revenu, à condition que ces dépenses soient raisonnables, ne soient pas des dépenses de nature personnelle ou des frais de subsistance et n'aient pas été faites en vue de constituer un bien permanent d'une valeur durable, c'est-à-dire ne soient pas une dépense de capital. Normalement, les dépenses admissibles doivent être engagées ou payées durant l'année même du gain du revenu.

Les achats de livres et de périodiques, les déplacements, l'entretien d'un bureau, le téléphone, les frais d'affranchissement, la dactylographie, la photocopie et les salaires d'employés à temps partiel figurent parmi les postes de dépenses les plus fréquents pour les professeurs. Ceux-ci doivent être en mesure de justifier sur demande ces dépenses.

Le calcul des frais de bureau et d'automobile étant parfois une opération assez complexe, nous donnons des détails à ce sujet:

Frais de bureau

Si le professeur a besoin d'un bureau pour gagner ses revenus d'entreprise et utilise le bureau exclusivement à cette fin, il peut l'établir dans sa maison et déduire à cet égard une proportion raisonnable des frais de la maison. Dans le cas d'une maison de huit pièces où le bureau occuperait une pièce moyenne, la somme déductible équivaudrait au huitième de tous les frais afférents à la maison.

Les frais d'entretien du bureau peuvent comprendre une part raisonnable des frais suivants: Taxes foncières, réparations, décoration, assurances, chauffage, éclairage, eau, nettoyage et intérêts hypothécaires. L'amortissement du coût en capital de la partie bureau de la maison est aussi déductible, mais il est recommandé de ne pas le déduire pour les raisons suivantes:

a) l'amortissement du coût en capital est assujetti à récupération à la vente de la maison ou à sa conversion à un usage personnel, s'il n'y a pas eu dépréciation. Dans les conditions inflationnistes actuelles, il est fort improbable qu'il y ait dépréciation, ce qui annulerait l'avantage gagné en déduisant l'amortissement.

b) le contribuable qui déduit l'amortissement s'expose à réaliser un gain de capital imposable sur la partie bureau de sa maison lorsqu'il la vendra ou la convertira à son usage personnel. La pleine exemption de l'impôt sur les gains de capital en vertu de la règle de la résidence principale sera maintenue si le contribuable s'abstient de déduire l'amortissement. (Voir IT-120R, alinéas 27, 28 et 29.)

L'amortissement du coût en capital du mobilier et de l'équipement peut se déduire sans hésitation si le contribuable est confiant qu'une dépréciation au montant déduit se produise au cours de la période de leur utilisation pour gagner un revenu d'entreprise. Le taux est de 20% de la catégorie 8 et s'applique à la juste valeur marchande au moment de la conversion à un usage d'entreprise ou au prix coûtant s'il y a eu acquisition directement à des fins d'entreprise. Au terme de chaque année, l'amortissement du coût en capital est déduit de la valeur en capital des biens et l'amortissement déduit à l'égard de l'année suivante est de 20% du solde restant qui est appelé "fraction non amortie du coût en capital". (Voir exemple ci-après.)

Frais d'automobile

Les frais de déplacement englobent souvent des frais relatifs à l'achat et à l'utilisation d'une voiture utilisée en partie pour les affaires et en partie pour l'agrément. Pour déduire ces dépenses, il faut pouvoir en connaître le total et la part qui peut raisonnablement être imputée aux frais de l'entreprise. Sur demande, le contribuable doit être en mesure d'établir à la satisfaction du fisc que les dépenses mentionnées sont admissibles. Il doit pouvoir produire des pièces justificatives des frais d'automobile déclarés et justifier le nombre total de milles parcourus pendant l'année, et le nombre de milles consacrés à ses affaires. D'où l'avantage d'utiliser une carte de crédit plutôt que de payer comptant. À noter que l'utilisation d'une automobile pour affaires n'inclut pas le trajet entre maison et bureau ni entre bureau et maison, mais seulement les déplacements occasionnés directement par les affaires (y compris les voyages interurbains). Si le contribuable a son bureau chez lui, il peut déduire les frais de déplacements entre son bureau et les locaux de son client.

Les dépenses d'utilisation comprennent: essence, huile, réparations, fournitures, pneus, stationnement, lavages, permis, frais de financement et

assurance.

On peut aussi compter des frais d'amortissement, au taux de 30% de la fraction non amortie du coût en capital des biens de la catégorie, soit le coût primitif moins l'amortissement accumulé.

Il faut tenir compte du millage et calculer le coût par mille parcouru (en divisant le coût total par le nombre de milles). Ce coût du mille ne doit ensuite être appliqué qu'au nombre de milles parcourus pour d'affaires. (Substituer des kilomètres aux milles, le cas échéant.)

Si le contribuable a échangé sa voiture contre une neuve au cours de l'année, il doit ajouter le prix d'achat de la nouvelle au solde non amorti (ou fraction non amortie du coût en capital) de la vieille voiture.

Voici un exemple:

Voiture achetée en 1975 au prix de	$4,500
Amortissement de 1975 - 30% de $4,500	1,350
Fraction non amortie du coût en capital - 31 décembre 1975	3,150
Amortissement de 1976 - 30% de $3,150	945
Fraction non amortie du coût en capital - 31 décembre 1976	2,205
Amortissement de 1977 - 30% de $2,205	661
Fraction non amortie du coût en capital - 31 décembre 1977	1,544

En 1978, le contribuable a échangé cette voiture contre une neuve au prix de $6,000. Il a payé $5,000 comptant et a obtenu $1,000 pour la reprise. Pour déterminer le nouveau coût en capital, il faut ajouter le prix de la nouvelle voiture à la fraction non amortie du coût en capital de la vieille voiture et déduire ensuite le montant de la reprise.

Le nouveau coût en capital est donc de $6,544 ($6,000 plus $1,544, moins $1,000) et l'amortissement du coût en capital de 1978 est de $1,963 (30% de $6,544). Un résumé de ces renseignements peut s'inscrire sur l'annexe 8 de la déclaration des particuliers. Le relevé des frais d'automobile de 1978 pourrait être comme suit:

Frais d'utilisation		
Essence	$670	
Lavages	37	
Stationnement	45	
Réparations	100	
Permis	45	
Assurance	275	
Frais de financement	225	$1,397
Amortissement (30% de $6,544)		1,963
Total		$3,360
Millage		
Vieille voiture-lecture de l'odomètre à la vente		40,000
K— LECTURE LE 1er janvier 1977.		30,000
Millage de la vieille voiture		10,000
Nouvelle voiture - lecture le 31 décembre 1977		6,000
Millage total des deux voitures pour l'année		16,000

Coût du mille - 21c ($3,360 ÷ 16,000).

Utilisation totale des voitures pour affaires au cours de l'année - 2,000 milles.

Déduction de frais d'automobile - $420 (2,000 x 21).

Au Québec, de nouveaux changements sont en vigueur concernant les dépenses d'automobiles. Certains frais fixes ne sont plus déductibles. Donc l'exemple ci-haut sur les frais d'utilisation ne s'appliquerait pas au Québec !

Revenu d'une entreprise ou d'honoraires professionnels

Le contribuable doit joindre un état de son revenu et de ses dépenses d'entreprises à sa déclaration d'impôt. Il faut utiliser à cette fin la formule T2032 — État des revenus et des dépenses — fournie par les bureaux de district de l'impôt. L'état peut couvrir une année d'imposition terminée le 31 décembre ou en n'importe quelle fin de période financière dûment adoptée par le contribuable. (Voir "Année financière", ci-après.)

Voici un exemple:

État des revenus pour l'année terminée le 31 décembre 1978

Revenus—honoraires professionnels gagnés		$4,000
Dépenses		
Bureau (voir ci-dessous)	$450	
Papeterie et fournitures	50	
Livres et périodiques	200	
Cotisations professionnelles	60	
Automobile (voir ci-dessus)	420	
Total	1,190	
Amortissement du coût en capital-articles d'ameublement	560	1,750
Revenu professionnel net		2,250
État des frais de bureau		
Taxes foncières		$1,000
Intérêt sur hypothèque		1,600
Assurance		200
Chauffage		600
Téléphone		150
Eau		75
Éclairage		55
Total		$3,680
Un huitième		460

(à supposer que le bureau occupe une pièce de grandeur moyenne dans une maison de huit pièces)

État de l'amortissement — meubles et équipement.	
Catégorie, 8,20%	
Fraction non amortie du coût en capital 1er janvier 1978	$2,000
Achat - machine à écrire électrique	850
Total	2,850
Moins produit de la cession de la vieille machine à écrire	50
Fraction non amortie du coût en capital 31 décembre 1978	2,800
Déduction pour amortissement de 1978 - 20% de $3,800	560

L'amortissement n'est déduit qu'à l'égard des meubles et de l'équipement. Il n'en est pas déduit à l'égard de la partie bureau du bâtiment résidentiel afin d'éviter qu'il y ait peut-être récupération de l'amortissement et gains de capital imposables à la vente de la propriété ou à sa conversion à l'usage personnel.

Année financière

Le contribuable qui dirige une entreprise peut adopter une année financière différente de l'année civile pour déclarer son recenu d'entreprise, ce qui peut amener la remise à plus tard de paiements d'impôt sur le revenu. Ainsi, par exemple, supposons que l'année financière d'une entreprise individuelle se termine le 31 janvier 1978. Le revenu des douze mois terminés le 31 janvier 1978 ne sera pas déclaré avant que le contribuable remette sa déclaration de 1978, même si les 11/12 en ont été gagnés en 1977. Une fois que le contribuable a choisi une année financière, il ne peut la changer sans l'agrément de Revenu Canada (Impôt) (Paragraphe 248(1) "Période financière" « 1 »).

Comptabilisation du revenu professionnel

Selon la nouvelle loi, le contribuable n'a plus le choix, en ce qui concerne ses services professionnels, de déclarer ses revenus selon la méthode de comptabilité de caisse. Il doit, plutôt, les déclarer l'année où ils sont à recevoir, qu'ils aient été reçus ou non. Un paiement pour services rendus est réputé à recevoir à la première des dates suivantes: la date de présentation de la facture, la date où la facture aurait été présentée s'il n'y avait pas eu de délai indu, ou la date où le paiement a été reçu (article 34) «203-204 ». (Voir la brochure "Personnes exercant des professions libérales: Calcul du revenu" de Revenu Canada (Impôt). Dans certains cas, une déduction compensatrice peut intervenir à titre de réserve pour créances douteuses ou mauvaises ou pour biens et services encore à fournir dans l'avenir (alinéas 20(1)(1), (m) et (n) « 120, 138, 141 »).

Gains en capital

Selon la nouvelle loi, les gains et pertes en capital découlant de la vente de certains genres de biens doivent intervenir dans le calcul du revenu. Les cas suivants peuvent revêtir un intérêt particulier pour les professeurs d'université.

(a) *Gain en capital provenant de la vente d'une résidence contenant un bureau.*

Règle générale, il n'y aura pas de gain en capital imposable lors de la vente d'une résidence principale. Si le logement contient un bureau, il n'y aura pas de gain en capital imposable si le contribuable s'est abstenu de déduire de son revenu d'entreprise l'amortissement du coût en capital. (IT-120R, alinéa 27). S'il l'a déduit, cependant, il se rend assujéti à payer impôt sur la moitié du gain en capital applicable à la partie bureau ainsi qu'à la récupération de l'amortissement déduit à son égard.

(b) *Gain en capital présumé durant la location temporaire d'une résidence principale*

Résidents du Canada

Normalement, la résidence principale louée devient sujette à l'impôt sur les gains en capital (paragraphe 45(1) « 259 »). Le propriétaire peut, cependant, garder à sa maison le statut de résidence principale durant une période de location d'au plus quatre ans en s'autorisant à cette fin du paragraphe 45(2) « 262 ». Cela assure un certain avantage aux personnes qui deviennent des non-résidents durant leurs absences du Canada. Le sens de l'alinéa récemment modifié 40(2) (b) « 251 » est obscur et Revenu Canada n'a pas encore indiqué comment ses dispositions s'appliqueront. Il semble que le professeur en congé sabbatique qui devient un non-résident durant une période comprise dans une même année d'imposition ou qui couvre deux années d'imposition puisse ne pas avoir à payer d'impôt sur ses gains de capital en s'autorisant du paragraphe 45(2) « 262 ».

Pour plus amples renseignements sur les gains en capital et le statut résidentiel, voir la section ci-après intitulée "Congés sabbatiques — non-résidents du Canada". Une brochure intitulée "Gains en capital" peut s'obtenir de Revenu Canada (Impôt).

Bourses d'études, de recherche et d'entretien, prix et subventions de recherche

La loi de l'impôt sur le revenu ne définit pas les expressions "bourse de recherche", "bourse d'entretien", "bourse d'études", "prix" et "subvention de recherche". Cependant, le Bulletin d'interprétation IT-75R renferme la description de ces allocations par le ministère et indique comment il en voit le traitement fiscal en vertu de la loi. Le nom donné à une subvention particulière n'indique pas nécessairement sa vraie nature. Dans certains cas, par exemple, une allocation appelée "bourse de recherche" peut se classer comme "subvention de recherche" aux fins de l'impôt (IT-75R, alinéa 14).

Prix, bourses d'études, de recherche et d'entretien

L'alinéa 56(1) (n) « 287g » exige d'inclure dans le revenu toutes les sommes *reçues* durant une année à l'un ou à la totalité de ces titres. Lorsque le bénéficiaire reçoit $500 et plus deux années de suite, la déduction de $500 s'applique chaque année ce qui vaut une déduction totale de $1,000. Il peut donc être avantageux de demander à l'organisme subventionnaire de payer ces allocations en deux années civiles et plus. Il est rappelé aux professeurs et étudiants que les frais de déménagement et de garde d'enfants peuvent, dans certains cas, se déduire de ces types de subventions (articles 62 et 63) « 316-319, 320-325 ».

Subventions de recherche

Comme il est dit ci-dessus, le total des allocations du genre des bourses d'entretien reçues dans une année n'a droit qu'à la déduction de $500 (alinéa 56(1) (n) « 287g » (IT-75R, alinéa 1). Par contre, les allocations réputées être des subventions de recherche aux fins de l'impôt doivent se déclarer comme revenu dans la mesure où elles dépassent les dépenses de recherche déductibles (alinéa 56(1) (o)) « 287h ». Les frais personnels ou de subsistance comme les repas ou le logement ne sont pas déductibles, à l'exception des frais de déplacement, y compris les repas et le logement, engagés pendant que le chercheur poursuivait ses travaux hors de chez lui.

Le chercheur peut déduire ses frais de déplacement a) entre son domicile et le lieu où il réside temporairement durant ses travaux de recherche, b) d'un lieu temporaire à un autre et c) à l'occasion de voyages extérieurs connexes à ses travaux (IT-75R, alinéa 25). Selon le ministère, le contribuable ne peut déduire les frais de déplacement de son conjoint et de ses enfants. Cependant, cette disposition n'est pas uniformément appliquée par Revenu Canada, si bien que beaucoup de contribuables sont autorisés à déduire tous les frais de déplacement de leur famille vers le lieu et du lieu des recherches. Comme on ne saurait s'attendre à ce que le professeur en congé sabbatique laisse sa femme et sa famille chez lui durant de longues périodes, on peut soutenir que leurs frais de déplacement constituent des frais connexes aux recherches et devraient se déduire. Ceux qui sont en congé sabbatique au Canada même devraient aviser à leur droit possible de déduire les frais de déplacement et de garde d'enfants. Sont à déduire les frais d'hôtel supportés pendant la recherche d'un logement plus permanent de même que toutes autres dépenses directement liées aux travaux telles que les frais d'assistance à la recherche, de dactylographie, de photocopie, de rédaction et de publication de rapports et tous autres frais pertinents autres que d'ordre personnel ou de subsistance. Les dépenses d'ordre capital peuvent se déduire (IT-75R, alinéa 27).

Il n'est pas nécessaire de présenter des reçus pour les frais de recherche avec la déclaration. Le ministère, cependant, peut exiger la présentation d'une comptabilité à n'importe quel moment; le chercheur devrait donc tenir une comptabilité de toutes ses dépenses admissibles et, si possible, garder les reçus justificatifs.

Normalement, les dépenses d'une année précédant ou suivant la réception d'une subvention de recherche peuvent encore s'en déduire. Font exception les dépenses survenant l'année antérieure à la réception de la subvention et avant notification de l'attribution de celle-ci (IT-75R, alinéa 26).

Même si les frais de recherche admissibles peuvent se déduire d'une subvention de recherche, ils ne sont pas déductibles du salaire sabbatique ni

d'une bourse de recherche, sauf, bien entendu, si la bourse est reputée être une subvention de recherche. Ainsi, par exemple, une bourse de recherche doctorale du Conseil des Arts du Canada n'est pas considérée comme subvention de recherche et ne bénéficie que de la déduction de $500 en toute année d'imposition, peu importe la somme de frais de recherche effectivement supportés. Aucune partie de ces frais ne peut se déduire non plus du salaire sabbatique.

Nonobstant ce qui précède, le professeur peut éviter de payer de l'impôt sur les fonds utilisés pour payer ses frais de recherche en demandant à son université une subvention de recherche au lieu d'un salaire. Seul le montant dépassant les frais de recherche admissibles est imposé. Cette pratique est approuvée par Revenu Canada et toutes les universités connaissent la procédure à suivre, laquelle devrait intervenir avant le commencement du congé sabbatique. (Voir "Congés sabbatiques", ci-après.)

Il y a lieu de noter que le bénéficiaire d'une bourse de recherche et d'une subvention de recherche peut déduire $500 (ou $1,000 si les paiements couvrent deux années civiles) de sa bourse ainsi que le total de ses frais de recherche de sa subvention.

Congés sabbatiques

Il ne sera question dans la présente section du Guide, que des dispositions fiscales canadiennes touchant les allocations de congés sabbatiques. Un professeur qui prend un congé sabbatique ou autre dans un pays étranger doit tenir compte aussi des dispositions fiscales du pays étranger. Les dernières sections du Guide traitent de certains problèmes fiscaux d'ordre étranger. Une publication portant sur "Le congé sabbatique et l'impôt sur le revenu" peut s'obtenir de l'ACPU ou de l'UAPUO.

Résidence

Le professeur en congé sabbatique qui fait des recherches ou gagne un revenu à l'étranger doit d'abord déterminer sa résidence aux fins de l'impôt. Comme la loi ne définit pas la résidence, il faut la déterminer en fonction des conditions propres à chaque cas. Les critères retenus par Revenu Canada (Impôt) sont indiqués dans l'IT-221, "Détermination de la résidence des personnes qui s'absentent du Canada".

Le professeur qui s'absente du Canada pour six mois et plus en congé sabbatique ou autre est d'ordinaire considéré comme non-résident du Canada aux fins de l'impôt sur le revenu si lui et sa famille ont quitté le Canada et s'il a disposé de bonne foi de son droit d'occuper son logement au Canada en le vendant ou en le louant pour une durée au moins égale à la période la plus longue entre six mois et le temps durant lequel il s'attend à être absent du Canada. D'autre part, si le professeur quitte sa résidence "en se réservant le droit d'annuler le bail à bref délai ou sans préavis, il serait normalement considéré comme continuant à résider au Canada" (IT-221, alinéa 2).

Il semble, d'après ce qui précède, qu'un émigrant temporaire peut influer sur son statut résidentiel ou même le déterminer en adoptant les dispositions locatives appropriées. S'il loue sa maison sans condition pour la durée prévue de son absence, il est considéré comme un non-résident, mais, s'il la loue sous réserve d'annulation sur préavis, il demeure un résident du Canada aux fins du fisc. La situation des gens qui occupent un appartement n'est pas tranchée dans l'IT-221, mais il semble probable que le professeur qui met fin à son bail ou sous-loue irrévocablement son appartement pour la durée de son absence sera réputé être un non-résident tandis que celui qui le sous-loue en se réservant le droit d'annulation à bref délai demeurera un résident du Canada.

Frais de recherche

Le professeur en congé sabbatique qui fait des recherches doit ensuite organiser ses affaires de façon à éviter de payer impôt sur les sommes reçues pour payer ses frais de recherche. Ces dispositions se rattachent au statut résidentiel, comme suit:

Congés sabbatiques — Résidents du Canada: Si le professeur en congé sabbatique demeure un résident du Canada aux fins du fisc, il n'importe pas qu'il demeure au Canada ou émigre temporairement. Dans les deux cas, est imposé par le Canada sur son revenu mondial. S'il doit payer un impôt étranger sur une partie de ce revenu, le Canada accordera normalement un crédit d'impôt étranger à l'égard de tout ou d'une partie de cet impôt.

Congés sabbatiques — Non-résidents du Canada: Les non-résidents sont assujétis à l'impôt canadien seulement sur le revenu provenant de sources canadiennes. Les trois catégories principales de revenus de source canadienne de la plupart des professeurs sont; a) salaires sabbatiques, revenu d'affaires ou professionnel, subventions de recherche, bourses de recherche, allocations familiales, etc.; b) revenu de placement; et c) revenu locatif. Le contribuable doit produire une déclaration d'impôt sur le revenu des particuliers à l'égard du revenu compris dans la catégorie a) ci-dessus (1T-75R, alinéa 30) et il a droit aux exemptions personnelles accordées aux résidents dans la proportion de son revenu canadien par rapport à son revenu mondial (IT-171, alinéa 4). Le traitement fiscal du revenu de placement et locatif (b) et (c) ci-dessus des non-résidents suit.

Allocations familiales: Avant 1974, les allocations familiales étaient exemptes d'impôt, et n'étaient pas payables aux résidents du Canada pendant qu'ils séjournaient à l'étranger, sauf pour des périodes très restreintes.

Depuis le 1er janvier 1974, les allocations familiales sont imposables à l'égard d'un enfant pour lequel le contribuable réclame une exemption aux fins de l'impôt. Par ailleurs, les allocations continuent d'être versées à l'égard d'un enfant admissible dont le parent responsable est assujetti à l'impôt canadien, sans égard à l'absence du Canada du parent ou de l'enfant. (Voir la brochure Allocations familiales publiée par le ministère de la Santé nationale et du Bien-être social et disponible dans les bureaux de postes.)

Congés pris à l'étranger

Il arrive qu'un professeur accepte une mission d'enseignement ou autre à l'étranger, dans des conditions où le gros de son revenu lui vient de sources étrangères. Si le professeur conserve sa résidence au Canada aux fins de l'impôt, il doit payer l'impôt sur ses revenus de source étrangère. S'il obtient le statut de non-résident, il n'est taxable au Canada que sur ses revenus de sources canadiennes. Son revenu mondial peut, cependant, devenir imposable en partie ou en totalité dans son nouveau pays de résidence.

Avant de sauter aux conclusions quant aux avantages et désavantages du statut de non-résident, le contribuable doit examiner le régime fiscal auquel il serait assujetti à l'étranger aussi bien qu'au Canada. Le résident du Canada a droit à un crédit à l'égard des impôts payés à l'étranger. Le crédit est le moindre de l'impôt étranger payé et de l'impôt sur le revenu canadien autrement applicable au revenu étranger. Cette déduction n'est permise qu'aux résidents du Canada et n'est pas accessible au non-résident imposé selon l'article 115 « 811-818 ». Le contribuable qui songe à renoncer temporairement à sa résidence canadienne devrait examiner son droit à un crédit d'impôt à l'égard de l'impôt sur le revenu canadien en vertu des lois fiscales de son nouveau pays de résidence. La question ne se pose que si le pays étranger impose les professeurs étrangers.

Dans certains cas, un congé pris à l'étranger est financé par une subvention d'une fondation située à l'étranger. Les fonds peuvent passer par une université canadienne et servent à couvrir les frais de déplacement et à maintenir le salaire du professeur.

Si le professeur obtient le statut de non-résident, la "source" des fonds servant à payer son salaire est déterminante. Si les subventions lui sont versées directement par une fondation étrangère, elles ne sont certainement pas imposables au Canada. D'après Revenu Canada, d'autre part, ces subventions constituent un revenu imposable si elles passent par une université canadienne.

Revenu de placements au Canada des non-résidents

Sauf quelques légères exceptions, les dividendes et intérêts de sources canadiennes payables sont assujettis à la retenue fiscale. Les taux sont de 5%, 10%, 15% ou 25% selon la nature du revenu et les dispositions des traités fiscaux internationaux applicables.

Le contribuable peut donner avis de son statut de non-résident aux sociétés, banques et autres institutions qui lui versent des dividendes ou des intérêts et leur demander d'effectuer les retenues et de les remettre au bureau de district de l'impôt. Il peut lui être plus pratique de charger un représentant de percevoir pour lui tous ses revenus de placement et de payer la retenue fiscale au bureau de district de l'impôt. De nombreuses banques, sociétés de fiducie et maisons de courtage sont au courant des taux d'imposition et des modalités de paiement et s'occupent de la retenue pour le compte de leurs clients.

Revenus de location canadiens des non-résidents

Si un non-résident possède une maison au Canada et la loue pendant son absence, le revenu de cette location est imposable, et l'impôt doit être payé selon l'une ou l'autre des méthodes suivantes:

1 (a) Le contribuable peut charger un agent, ou son locataire, de retenir et verser 25% (ou 15%, en cas de réduction prévue par un traité) du loyer brut, acquittant ainsi la totalité des impôts payables sur son revenu de location (alinéa 212(1)(d)). (La loi de l'imposition du Québec ne prévoit pas de retenue fiscale sur les paiements aux non-résidents.)

1(b) Le non-résident peut opter, en vertu de l'article 216, de payer impôt sur son revenu locatif net aux taux maximums applicables aux résidents, mais sans exemptions personnelles pour lui-même ou les personnes à sa charge. Il peut exercer cette option en tout temps dans les deux années consécutives à la fin de chaque année d'imposition où les loyers sont reçues. Les taux maximums de l'année d'imposition s'appliquent au revenu net après déduction de tous les frais pertinents (impôts fonciers, réparations, assurance, intérêt hypothécaire, commissions d'agents, amortissement des articles d'ameublement, etc.). Si l'impôt sur le revenu net après déduction des frais est inférieur aux 15% ou 25% déjà retenus sur les loyers bruts, un remboursement peut alors être demandé.

L'amortissement du coût en capital de la résidence ne devrait pas se déduire parce qu'il sera récupéré à la réoccupation des lieux et rendra aussi la résidence assujétie à l'impôt sur les gains de capital. L'amortissement du coût en capital des meubles et de l'équipement peut à coup sûr se déduire des loyers si le propriétaire est confiant qu'une dépréciation selon le montant déduit va se produire au cours de la période de location. Le taux est de 20% et s'applique à la juste valeur marchande des articles d'ameublement au moment où ils ont été convertis de biens d'usage personnel en biens locatifs. A la fin de chaque année, l'amortissement du coût en capital est déduite de la valeur en capital et l'amortissement déduit l'année suivante est de 20% du solde restant. (Voir exemple de la déduction de l'amortissement du coût en capital des meubles et de l'équipement sous "Revenu d'une entreprise ou d'honoraires professionnels", ci-dessus.)

Supposons, par exemple, qu'un professeur a loué sa résidence contenant des articles d'ameublement valant $10,000 le 1er septembre 1978 en vertu d'un bail allant du 1er septembre 1978 au 31 août 1979. Il peut déduire un amortissement du coût en capital de $2,000 (20% de $10,000) du revenu en loyer reçu durant la période du 1er septembre 1978 au 31 décembre 1978. Cependant, si la juste valeur marchande des articles d'ameublement le 31 août 1979 revient à plus de $8,000 ($10,000 moins un amortissement du coût en capital de $2,000), le montant dont la valeur marchande dépasse $8,000 doit se récupérer en 1979. Si la juste valeur marchande dépasse $10,000, il y a alors aussi des gains de capital imposables en 1979. Le professeur n'a pas droit à un amortissement du coût en capital à l'égard de 1979 de toute façon puisque le bien n'est pas utilisé comme bien commercial le 31 décembre 1979.

2) Au lieu de recourir à cette méthode, le non-résident peut produire une formule NR6, par laquelle lui et son agent s'engagent conjointement à produire une déclaration d'impôt dans les six mois suivant la fin de l'année. L'agent sera alors tenu de retenir et de verser 25% (ou 15%) du revenu estimatif net, provenant du loyer. Le solde, s'il en est, devra être payé au moment de la production de la déclaration d'impôt.

Un engagement distinct est exigé pour chaque année d'imposition. (Paragraphe 216(4).) C'est une possibilité dont il a été question au sujet des résidents et des non-résidents sous "Gains de capital", ci-dessus.

Résumé des avantages du statut de non-résident

Comme il est dit plus haut, la condition de résidence du professeur d'université en congé sabbatique ou simple congé est maintenant un peu embrouillée. Il semble que, s'il loue sa résidence au mois, le professeur est considéré comme demeurant un résident du Canada aux fins de l'impôt sur le revenu. D'autre part, s'il la loue en vertu d'un bail irrévocable pour la durée de son absence, il peut être reputé non-résident.

Les avantages fiscaux du statut de non-résident

sont sensiblement réduits par la nouvelle loi, mais les suivants subsistent:
a) Le revenu de sources étrangères des non-résidents n'est pas assujetti à l'impôt canadien sur le revenu.
b) La retenue fiscale est appliquée au revenu de placements versé ou crédité aux non-résidents à des taux probablement inférieurs aux taux marginaux applicables aux résidents.
c) Les taux d'impôts des revenus de location sont probablement plus faibles pour les non-résidents que pour les résidents.
d) Les non-résidents peuvent désenregistrer leur régimes d'épargne-retraite enregistrés canadiens en payant un taux d'impôt sur le revenu inférieur à celui des résidents.
e) En devenant non-résident, le contribuable acquiert certaines options touchant les gains de capital de ses placements qui, s'il les choisit judicieusement, peuvent lui faire payer un impôt sur les gains de capital inférieur à celui qu'il payerait comme résident.

Avant de chercher à obtenir le statut de non-résident, le professeur devrait examiner comment il peut se ressentir à la fois des impôts sur le revenu canadien et étranger. Certaines ententes fiscales internationales du Canada permettent aux Canadiens de faire des recherches dans les pays concernés sans payer d'impôt étranger sur les subventions et les salaires sabbatiques. Certains des pays exemptent aussi le revenu provenant de l'enseignement dispensé chez eux. Des exemptions semblables de l'impôt sur le revenu canadien sont accordées par le Canada aux nationaux étrangers qui enseignent ou font des recherches chez nous.

Les sections qui suivent examinent certaines des questions importantes pour les Canadiens qui projettent d'aller à l'étranger.

Les personnes temporairement absentes du Canada devraient noter que l'étalement général du revenu n'est pas permis aux non-résidents.

Certaines conséquences fiscales des congés sabbatiques et autres à l'étranger

Le Canada est en train de négocier et, dans certains cas, de renégocier des accords fiscaux. Au 1er novembre 1978, le Canada avait ratifié et proclamé en vigueur des traités fiscaux signés avec l'Australie, la Belgique, le Danemark, la République Dominicaine, la Finlande, la France, l'Allemagne, l'Irlande, Israël, la Jamaïque, le Japon, les Pays-Bas, la Nouvelle-Zélande, la Norvège, le Pakistan, les Philippines, Singapour, l'Afrique du Sud, la Suède, la Suisse, Trinidad et Tobago, le Royaume-Uni et les États-Unis. Des traités revisés ont été négociés avec l'Allemagne et le Royaume-Uni, mais ils n'ont pas encore été proclamés en vigueur. Dans l'intervalle, les accords actuels avec ces deux pays demeurent en vigueur. En outre, de nouveaux traités ont été négociés avec l'Autriche, le Libéria, la Malaisie, le Maroc et l'Espagne, mais ils n'ont pas encore été proclamés en vigueur. Le but essentiel de ces accords est d'éviter la double imposition et d'empêcher l'évasion fiscale. Un accord contient invariablement des dispositions qui déterminent lequel des États contractants va imposer le revenu provenant de sources particulières.

Crédit d'impôt canadien à l'égard d'impôts étrangers

Le professeur qui demeure un résident du Canada aux fins de l'impôt paie l'impôt canadien sur son revenu mondial; cependant, la loi de l'impôt sur le revenu du Canada lui donne droit à des crédits d'impôt à l'égard des impôts étrangers, peu importe l'existence ou non d'un accord entre les deux pays. Règle générale, le crédit d'impôt étranger accordé par le Canada consiste dans l'impôt étranger payé ou l'impôt canadien frappant le revenu étranger, soit le moindre des deux. C'est ainsi que le professeur qui conserve la résidence canadienne paie impôt une seule fois sur le revenu de source étrangère, mais au taux supérieur canadien ou étranger.

Élimination de la double imposition

Le professeur qui devient un non-résident du Canada, mais qui continue de payer l'impôt canadien sur son salaire sabbatique et ses subventions, ne sera tout probablement pas soumis à une double imposition. Si le pays étranger impose ce revenu, le professeur sera exempté de l'impôt canadien en vertu de l'article 115(2) (e)(i)(A) « 816b » de la loi. (1T-161R, alinéa 1a.) Le professeur qui apprend que ce revenu sera frappé par l'impôt étranger devrait inciter son employeur à demander au bureau de district de l'impôt de le dispenser des retenues à la source et éviter ainsi la ponction immédiate d'une retenue fiscale canadienne qui sera normalement remboursée (1T-161R, alinéa 5).

Convention modèle de l'O.C.D.E.

Les accords fiscaux du Canada revêtent en grande partie une forme internationalement reconnue. En fait, l'Organisation de coopération et de développement économique (O.C.D.E.) a adopté à Paris, le 29 avril 1977, une nouvelle Convention modèle permettant d'éviter la double imposition. Le Canada fait partie de l'O.C.D.E. et plusieurs de ses accords fiscaux, surtout ceux qu'il a récemment renégociés, se règlent sur ce modèle.

La Convention modèle renferme les articles suivants qui peuvent intéresser les professeurs et étudiants.

Article 4: Résident — Les lois de chaque État contractant détermineront le sens à attacher à l'expression "résident" aux fins de l'impôt sur le revenu au sein de l'État. L'expression ne s'appliquera pas à une personne qui est passible d'impôt dans un État uniquement parce qu'elle a un revenu provenant de sources de cet État ou un capital qui s'y trouve situé.

Si une personne est classée comme résident des deux États contractants, divers critères président à la détermination de son statut de résident. Ce sont la localisation d'une demeure permanente, un domicile habituel et la localité. Si ces critères ne suffisent pas, les deux États trancheront la question d'un commun accord.

Article 14: Services personnels indépendants — Le revenu allant à un *résident* de l'État A à l'égard des services personnels indépendants n'est imposable que dans l'État A, sauf si le résident dispose d'une base fixe qui lui est régulièrement disponible dans l'État B. Dans ce dernier cas, l'État B peut imposer le revenu comme étant attribuable à cette base fixe. L'expression "base fixe" n'est pas définie dans la Convention modèle, mais, selon Revenu Canada, ce peut être un "centre d'activité d'un caractère fixe ou permanent qui doit être régulièrement à la disposition de celui qui exerce les activités". En outre, l'intéressé doit normalement être en mesure d'exercer un certain contrôle sur la "base fixe". Les services personnels indépendants comprennent des activités telles que la consultation, la recherche et tout autre service assuré en vertu d'un type de contrat d'entreprise selon lequel la rémunération revêt d'ordinaire la forme d'honoraires et non d'un salaire. Les bourses de recherche, les subventions de recherche et les salaires sabbatiques sont normalement classés comme revenu non salarial aux fins des accords.

Article 15: Services personnels assurés à titre de salarié — Le salaire allant à un résident de l'État A à l'égard d'un emploi est imposable seulement dans l'État A, sauf si l'emploi s'exerce dans l'État B, auquel cas l'État B peut l'imposer, sous réserve des conditions suivantes:

Le revenu d'emploi d'un résident de l'État A gagné dans l'État B est imposable seulement dans l'État A si:
a) le bénéficiaire est présent dans l'État B durant au plus 183 jours au cours de l'année financière;
b) la rémunération est payée par un employeur qui n'est pas un résident de l'État B; et
c) la rémunération n'est pas supportée par un établissement permanent ou une base fixe que possède le résident dans l'État B.

Article 19: Service gouvernemental — Les salaires payés par l'État A aux résidents présents dans l'État B à l'égard de services connexes à l'exercice de fonctions gouvernementales ne sont imposables que dans l'État A. Si ces services sont assurés par des nationaux de l'État B ou par des personnes qui ne sont pas devenues des résidents de l'État B seulement pour assurer les services, les salaires ne sont imposés que dans l'État B.

Article 20: Étudiants — L'étudiant résident de l'État A qui se rend dans l'État B pour étudier ne paie pas impôt dans ce dernier sur les fonds d'entretien reçus de sources extérieures à l'État B, peu importe qu'il demeure un résident de l'État A ou devienne un non-résident.

Dispositions générales

Les traités internationaux permettent à un État qui pratique l'impôt sur le revenu d'appliquer ses propres lois fiscales et ses propres prescriptions de résidence tant qu'elles ne viennent pas en conflit avec le traité. Cela peut susciter des complications à cause des différences qui existent entre les États contractants, les visiteurs ayant à se familiariser un peu avec les lois et les pratiques fiscales locales. Cependant, les conséquences pratiques des Articles 14, 15, 19 et 20 semblent faire que le professeur (ou l'étudiant) qui visite un pays partie au traité pour y effectuer des recherches (ou des études) ne paye pas impôt dans ce pays sur les fonds reçus de sources extérieures durant sa visite. D'autre part, le professeur (ou l'étudiant) y paye impôt sur le salaire qu'il y a gagné, sous réserve des exceptions de l'Article 15.

Exemption spéciale de la rémunération professorale

La Convention modèle ne renferme plus la disposition par laquelle un État permettra aux résidents d'un autre État d'enseigner chez lui durant deux ans en ne payant pas d'impôt sur leur revenu professoral. Le ministère des Finances a déclaré que ce privilège ne figurera dans aucun traité nouveau ou renégocié.

Au 1er novembre 1978, cette exemption réciproque ne figurait encore que dans les traités du Canada avec l'Australie, le Danemark, la Finlande, l'Allemagne, l'Irlande, le Japon, les Pays-Bas, la Nouvelle-Zélande, la Norvège, l'Afrique du Sud, la Suède, Trinidad et Tobago, le Royaume-Uni et les États-Unis.

Les professeurs de ces pays au Canada seront soumis à une retenue fiscale à la source sur leur revenu professoral et aux cotisations au Régime de pensions du Canada et devront produire une déclaration d'impôt sur le revenu. A la cessation de son séjour temporaire au Canada, le professeur pourra demander le remboursement des impôts payés sur son revenu professoral et de ses cotisations au R.P.C. À cause de la phraséologie particulière des traités fiscaux en cause, les visiteurs des États-Unis, de Finlande et d'Australie peuvent séjourner au-delà de la limite de deux ans et avoir droit à l'exemption à condition de ne pas enseigner durant plus des deux années (IT-68R, alinéa 3). L'accord avec la Jamaïque accorde l'exemption de deux ans aux Canadiens qui y enseignent, mais non aux Jamaïcains qui enseignent au Canada. Le Canada a négocié avec l'Allemagne et le Royaume-Uni de nouveaux traités qui éliminent l'exemption professorale de deux ans, mais ces traités n'avaient pas encore été proclamés en vigueur au 1er novembre 1978. A leur ratification, ces deux accords auront effet rétroactif à 1976.

Résidents de pays liés par traité enseignant au Canada

Le professeur d'un pays signataire d'un traité qui enseigne au Canada devrait s'enquérir de sa situation fiscale dans son pays et au Canada. Les accords fiscaux internationaux peuvent assurer une exemption de l'impôt canadien sur le revenu professoral des résidents des États contractants, mais sans soustraire les intéressés à l'impôt de leur pays.

Résidents canadiens enseignant dans les pays liés par traité

Les accords passés avec les 14 pays susmentionnés ainsi que l'accord avec la Jamaïque permettent aux Canadiens d'enseigner temporairement dans ces pays durant au plus deux ans sans que leur revenu professoral soit assujéti à l'impôt local. Les professeurs qui projettent d'enseigner dans l'un de ces pays en franchise d'impôt devraient s'informer au sujet des arrangements d'exemption intérimaires qui peuvent beaucoup différer de ceux qui sont appliqués au Canada.

Le Canadien devrait retenir que l'accord l'exempte de l'impôt sur le revenu seulement dans le pays étranger et non pas nécessairement au Canada. S'il demeure résident canadien, il devra payer l'impôt canadien sur son revenu mondial. Cependant, s'il devient non-résident, il n'aura pas à payer l'impôt canadien sur le revenu provenant de sources étrangères. Ce sont l'accord particulier du pays en question et son interprétation par le fisc local qui décideront s'il peut demeurer exempt de l'impôt dans le pays signataire du traité après être devenu non-résident du Canada. Le professeur canadien devrait à coup sûr voir ce qu'il en est avant de contracter des engagements.

Il devrait aussi retenir que les exemptions biennales réciproques sont vouées à disparaître de tous les traités fiscaux internationaux du Canada, et cela avec peut-être des effets rétroactifs.

Imposition étrangère

1. États-Unis

Si un professeur canadien prend son congé sabbatique aux États-Unis et passe dix mois, un an ou quinze mois dans ce pays tout en ayant l'intention de revenir au Canada, le Service du revenu intérieur des États-Unis le considère comme un étranger non-résident, car il est défini comme "une personne venue aux États-Unis dans un but précis qui, de par sa nature, peut être atteint promptement". Ses obligations fiscales sont alors restreintes au revenu provenant de sources américaines. Un revenu gagné aux États-Unis et "effectivement rattaché à l'exercice d'un métier ou

d'un commerce aux États-Unis'' est imposable à un taux progressif, une fois faites les déductions admissibles. Un revenu qui n'est pas effectivement rattaché à un métier ou un commerce est imposable à un taux uniforme de 30%. Cependant, en vertu des accords fiscaux canado-américains, ce taux est abaissé à 15% dans le cas de tous les revenus, autres que le revenu du travail que le résident canadien reçoit de sources américaines. Un professeur qui veut aller en congé sabbatique aux États-Unis pourra probablement se classer comme visiteur relevant d'un programme d'échanges. L'étranger non-résident qui tombe dans cette catégorie peut exclure de son revenu imposable aux États-Unis les émoluments qu'il reçoit de son université canadienne pendant son congé sabbatique.

Si un candidat à un grade dans une université des États-Unis reçoit une bourse, le montant de celle-ci peut être exclu du revenu aux fins de l'impôt, que la bourse soit de provenance américaine ou autre. Toutefois, toute partie d'une subvention qui constitue une rémunération pour un enseignement, une recherche ou un autre travail obligatoire est imposable à moins que tous les candidats au grade en question ne doivent rendre des services similaires. Si le bénéficiaire n'est pas candidat à un grade, une bourse accordée aux États-Unis est imposablè dans la mesure où elle dépasse $300 par mois, l'excédent devant être multiplié par le nombre de mois. La déduction mensuelle de $300 n'est accordée que si la subvention provient soit d'un organisme à but non lucratif exempt de l'impôt sur le revenu des États-Unis, soit du gouvernement ou d'une institution gouvernementale des États-Unis, du gouvernement d'un État, d'un organisme international ou d'un organisme éducatif ou culturel à caractère binational ou multinational selon le *Mutual Educational and Cultural Exchange Act* de 1961. La déduction ne peut s'appliquer que pendant 36 mois, après quoi le montant total de la bourse devient imposablè aux États-Unis. Une bourse de source canadienne accordée à un professeur canadien ayant le statut d'étranger non-résident aux États-Unis n'est pas assujettie à l'impôt américain à moins qu'elle ne soit considérée comme la rémunération d'une tâche accomplie aux États-Unis.

Article VII — Rémunération des services personnels. La convention fiscale Canada-États-Unis porte que, si un résident canadien séjourne aux États-Unis pendant une période ne dépassant pas 183 jours au cours d'une année fiscale, il n'a pas d'impôt à payer aux États-Unis pour la rémunération reçue à l'égard d'un travail accompli dans ce pays pendant l'année en cause moyennant une des deux conditions suivantes:

a) la rémunération ne dépasse pas $5,000, ou

b) la rémunération provient d'un résident canadien, d'une société ou autre organisme canadien ou d'une succursale canadienne permanente d'une entreprise américaine (auquel cas le montant de l'exemption n'est pas limité).

Article VIIIa — Professeurs et enseignants. Le traité fiscal prévoit aussi que le professeur ayant sa résidence au Canada et qui se trouve temporairement aux États-Unis pour enseigner dans une maison d'enseignement pendant une période ne dépassant pas deux ans, n'a pas à payer d'impôt à l'égard de la rémunération qu'il reçoit pour cet enseignement. Il faut remarquer que le traité fiscal vise les résidents canadiens et que, partant, celui qui devient non-résident du Canada durant son congé aux États-Unis risque de nuire à sa situation, bien qu'on ne connaisse pas de cas où cela soit arrivé.

Article IX— Étudiants. Les étudiants canadiens en séjour temporaire aux États-Unis dans un but d'études ne payent pas l'impôt américain sur les sommes qu'ils reçoivent du Canada pour leur entretien et leurs études.

2. Royaume-Uni

Comme il est dit plus haut, le Canada a négocié avec le Royaume-Uni un nouveau traité qui, une fois ratifié, aura des effets rétroactifs à 1976. Dans l'intervalle, l'accord actuel demeure en vigueur et renferme les dispositions suivantes intéressant les visiteurs du Canada au Royaume-Uni et vice-versa.

Article 13 — services personnels indépendants: (Voir Article 14 de la Convention modèle ci-dessus.) Le revenu gagné au Royaume-Uni par un *résident* du Canada dans le cadre d'un contrat d'entreprise est passible de l'impôt canadien, sauf si le visiteur a une base fixe au R.U. Si ce revenu est imposé par le R.U., le visiteur peut alors déduire un crédit d'impôt étranger de son impôt canadien. Si le taux d'impôt du R.U. est plus élevé que le canadien, seulement le moindre des deux est admis comme crédit par le Canada. Si le visiteur devient *non-résident* du Canada, le Canada n'imposera pas son revenu de source britannique, mais le R.U. le fera peut-être.

Article 14 — revenu provenant d'un emploi: (Voir Article 15 de la Convention modèle ci-dessus.) Si l'emploi est exercé au R.U. par un résident du Canada, le revenu peut être imposé au R.U. Cependant, le salaire de l'emploi continue d'être imposé au Canada seulement si les conditions suivantes existent:

a) le bénéficiaire est présent au R.U. durant au plus 183 jours *au cours de l'année fiscale du R.U. qui va du 6 avril d'une année au 5 avril de la suivante,* et

b) la rémunération est payée par un employeur ou pour le compte d'un employeur non-résident du R.U. et

c) la rémunération n'est pas déduite des bénéfices d'un établissement permanent ou d'une base fixe que l'employeur possède au R.U.

Article 17 — service gouvernemental: (Voir Article 19 de la Convention modèle ci-dessus.) Le salaire payé par le Canada à une personne présente au R.U. seulement pour la prestation de services pour le compte du Canada dans l'exercice d'une fonction gouvernementale n'est imposable qu'au Canada.

Article 18 — professeurs et enseignants: Le professeur du Canada en visite au R.U. afin d'enseigner dans une maison d'enseignement durant au plus deux ans ne paye pas l'impôt du R.U. sur sa rémunération professorale. Contrairement à la disposition correspondante de l'Article VIIIA de la convention fiscale canado-américaine, l'exemption vaut peu importe que le professeur demeure résident du Canada ou devienne non-résident. S'il demeure résident aux fins de l'impôt, il paye, bien entendu, l'impôt canadien sur son revenu mondial. S'il devient non-résident, son revenu professoral gagné au R.U. échappe à l'impôt des deux pays.

Article 19(2) — allocations de recherche: Après une longue période d'incertitude, la situation fiscale du professeur qui effectue des recherches au R.U. a été tirée au clair. Le Ministère du Revenu du R.U. a confirmé que celui qui est ou était, avant de visiter le R.U., résident du Canada ne paye pas l'impôt du R.U. sur les subventions, allocations ou prix destinés avant tout à la recherche durant au plus deux ans et provenant d'un organisme canadien public, religieux, de bienfaisance, scientifique, littéraire ou éducatif. Les salaires sabbatiques sont admis comme allocations.

Le nouveau traité suit de plus près la Convention modèle de l'O.C.D.E. Les modifications essentielles qui touchent les professeurs canadiens en visite au Royaume-Uni consistent dans l'élimination de l'exemption professorale de deux ans et les allocations de recherche indiquées dans les Articles 18 et 19(2) ci-dessus. En vertu du nouveau traité, les Articles 14 et 15 de la Convention modèle vont s'appliquer en grande partie. La rémunération de l'enseignement sera vraisemblablement imposée dans le pays où l'enseignement est assuré. Les subventions et allocations de recherches seront probablement imposées dans le pays de leur source. Comme certaines dispositions du nouveau traité seront rétroactives à 1976, la question de cotisations à nouveau peut peut-être surgir. Cependant, la clause 4 de l'Article XXVIII porte que, si la nouvelle Convention donne lieu à un traitement fiscal défavorable, le vieil Accord s'appliquera aux années d'imposition commençant avant l'entrée en vigueur de la Convention de 1978. Cela signifie que les personnes de l'un ou l'autre pays qui séjournent dans l'autre pour y enseigner ou effectuer des recherches seront probablement taxées selon les dispositions de l'Accord existant.

3. France

La Convention fiscale canado-française (1975) suit en substance la Convention modèle de l'O.C.D.E.

Article XIV — services professionnels: L'Article est presque identique à l'Article 14 de la Convention modèle. Le revenu tiré par un résident du Canada de services professionnels *indépendants* assurés en France n'est imposé qu'au Canada, sauf si l'intéressé agit à partir d'une base fixe qui lui est régulièrement disponible.

Article XV — services personnels à titre de salarié: Le *salaire* gagné en France par un résident du Canada est imposé par la France sauf si l'intéressé séjourne en France durant au plus 183 jours de l'année civile et si a) la rémunération ne dépasse pas le plus élevé de 2,500 dollars canadiens et 10,000 francs français ou b) la rémunération est payée par un employeur ou pour le compte d'un employeur non résident de France et la rémunération n'est pas supportée par un établissement permanent ou une base fixe dont dispose l'employeur en France.

Article XIX — services gouvernementaux: L'Article suit de près la Convention modèle. En général, les résidents du Canada qui assurent des services gouvernementaux en France pour le compte du Canada ne sont imposés que par le Canada.

Article XX — étudiants: Les Canadiens qui séjournent en France dans un but uniquement d'études ou de formation ne payent pas impôt en France sur les fonds d'entretien ou d'études reçus de sources extérieures, qu'ils demeurent résidents du Canada ou deviennent non-résidents.

Professeurs et enseignants: L'exemption d'impôt d'une durée de deux ans à l'égard du revenu professoral encore assurée par les traités avec les États-Unis et le Royaume-Uni ne figure pas dans la nouvelle Convention fiscale canado-française.

Impôt résidentiel français: Toute personne, quelle que soit sa nationalité, résidant habituellement en France est sujette à l'impôt français. Sont considérées comme ayant en France une résidence habituelle:

a) les personnes qui ont une habitation à leur disposition à titre de propriétaire d'usufruitier ou de locataire lorsque, dans ce dernier cas, la location est conclue soit par un accord unique, soit par accords successifs pour une période continue d'au moins une année;

b) les personnes qui, sans disposer en Fance d'une habitation dans les conditions définies en (a) ci-dessus, ont néanmoins en France le lieu de leur domicile principal. Quoique cette notion de domicile principal ne soit pas définie par la loi, il est généralement admis qu'un étranger a son domicile principal en France lorsqu'il y séjourne effectivement plus de six mois dans l'année.

Il semble en découler qu'un professeur canadien qui passe son année sabbatique en France est considéré comme résident français et, par conséquent, assujetti à l'impôt français sur le revenu.

Les Canadiens qui ont passé leur congé sabbatique en France affirment n'avoir eu à payer l'impôt en France que s'ils ont touché des revenus de sources françaises. Toutefois, la personne qui a son domicile mais non sa résidence en France peut en vertu de l'article 164 du Code des impôts, être personnellement imposable sur la plus forte des deux valeurs suivantes: son revenu effectif de sources françaises, ou un revenu présumé correspondant à cinq fois la valeur de location de sa résidence en France. On ne semble pas avoir recouru à l'article 164 pour taxer les professeurs en congé sabbatique, cet article ayant apparemment pour fonction d'assujettir à l'impôt les personnes qui entretiennent de luxueuses résidences secondaires en France pendant un temps assez long.

Article XVIII — élimination de la double imposition: Le visiteur canadien en France peut être assujéti à l'impôt de France ou du Canada, mais non des deux pays. Le Canada admet l'impôt à payer en France en déduction de l'impôt à payer au Canada à l'égard du revenu concerné. La France exempte l'impôt à payer au Canada de l'impôt français.

Conclusion générale: Comme les traités avec les États-Unis, le Royaume-Uni et la France sont d'ordre réciproque, les diverses impositions et exemptions s'appliquent en grande partie de façon inverse aux résidents de ces pays en visite au Canada. Ces résidents, cependant, sont soumis au droit fiscal canadien et à ses interprétations canadiennes, sauf conflit entre le droit local et le traité, auquel cas les dispositions du traité l'emportent.

Dernières observations

Le Comité invite les membres de l'ACPU qui auraient difficultés quant à l'application de la Loi de l'impôt sur le revenu à se présenter au bureau local de l'Impôt. Ceux qui estimeraient avoir été injustement traités par ce bureau peuvent s'adresser à l'ACPU. L'ACPU ne se chargera toutefois de leur cause que si elle soulève un problème de portée générale. Par ailleurs, l'ACPU entend faire des démarches auprès du ministère du Revenu national en vue d'obtenir que les règles et les décisions soient uniformes par tout le pays.

L'Association est bien consciente de ne pas avoir abordé, dans le présent Guide, tous les problèmes fiscaux de tous les professeurs d'université. Elle entend poursuivre ses travaux et en publier régulièrement les résultats dans le Bulletin de l'ACPU.

Ce guide d'impôt pour 1978 a été préparé par Charles Hebdon, Agent professionnel et conseiller en bénéfices économiques pour le compte de l'UAPUO, avec l'aide de M. James Drew (Hautes Etudes Commerciales) et Robert Léger (ACPU).

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reported on a T4A « TP4A ». Many universities will honour such requests.

Clearly, it is to a teacher's advantage to have all of his business income recognized as such because of the broader range of deductible expenses. For instance, if a teacher maintains an office in his home in order to earn business income, the expenses of that office are deductible from his business income. (See office expenses, below). Since no income tax will be withheld at source from business income, the taxpayer should bear in mind that he must make up for this deficiency when his annual income tax return is subsequently filed. Furthermore, unless tax is deducted at source from at least three-quarters of a taxpayer's "Net Income" for a taxation year, he is required to make quarterly instalment payments. (See Individual Income Tax Return for calculation of "Net Income"). (Subsection 156(1) « 754 »).

Deductions from employment income

Section 6 « 30-40 » deals with fringe benefits arising from employment. The value of some such benefits must be included for tax purposes whereas the value of others may be excluded. (IT-71R).

Section 8 « 53-73 » specifies the deductions which are permitted from employment income. Subsection 8(2) « 53 » contains the general limitation that, except as permitted by section 8, no other deductions are allowable. In contrast, all reasonable expenses of earning business or professional fee income are deductible for income tax purposes, except capital outlays which are generally amortizable.

Allowable deductions from employment income include the following:

a) *employment expenses* — available to all employees up to 3% of employment income with a limit of $250 « $500 in Quebec » (Paragraph 8(1) (a) « 54 »).

b) *legal expenses* — an employee may deduct legal expenses incurred in collecting salary from an employer or former employer. (Paragraph 8(1) (b) « 71 »).

c) *teachers' exchange fund* — a single amount in respect of all employments of the taxpayer as a teacher, not exceeding $250 paid by him in the year to a fund established by the Canadian Education Association for the benefit of teachers from Commonwealth countries present in Canada under a teachers' exchange arrangement. (Paragraph 8(1) (d) « 73 »).

d) *travelling expenses* — incurred by an employee.

i) who is ordinarily required to carry on the duties of his employment away from his employer's place of business or in different places, or

ii) who has a contractual obligation to pay travelling expenses in the performance of his duties and for which he is not reimbursed by a travel allowance.

Relevant situations might arise where a teacher participates in an exchange programme or is required to commute between two campuses at his own expenses. (Paragraph 8 (1)(h) « 57 »).

If the use of an automobile is involved, interest and capital cost allowances (depreciation) may be included in the travelling expense. (Paragraph 8(1) (j) « 58 »). (IT-272). (See "Automobile Expenses" below). In Quebec, since 1978, the interest paid on a loan, made for the purchase of an automobile is only deductible if the automobile is used *exclusively to carry on the duties relating to employment.* Since an automobile is usually used also for personal needs, the interest is therefore usually not deductible.

e) *dues and other expenses of performing duties.*

i) dues for membership in professional societies are not deductible from employment income unless membership is a contractual obligation of employment or if the payment of the dues is necessary to maintain a professional status recognized by statute. If membership is a necessary expense of earning business or professional income the dues will be an allowable deduction therefrom. (Paragraph 8(1) (i) (i) « 62a »).

ii) faculty association fees qualify as union dues and are deductible from employment income. (Subparagraph 8(1) (i) (iv) « 62b »).

iii) office rent, salary to an assistant or substitute, or cost of supplies if required to be paid by the employee by his contract of employment. (Paragraph 8 (1) (i); subparagraphs (ii) and (iii) « 72 »).

f) *unemployment insurance premium* — (Paragraph 8(1) (k) « 64a »).

g) *Canada or Quebec Pension Plan contributions* — (Paragraph 8(1) (L) « 64b »).

h) *contributions to a registered pension plan* (RPP) — up to $3,500 each year in respect of current services if retained by the employer from salary. (Paragraph 8(1) (m) « 64c, 65 »). If the employee's contractual contribution to the plan is less than $3,500 then all or part of the shortfall may be made up through voluntary contributions if the plan so provides.

Independently of the above, a teacher may, if his registered pension plan so permits, make additional voluntary contributions up to $3,500 a year in respect of past services. (Subsection 8(7) « 67 »). This right to contribute the supplementary $3,500 is extended only to teachers and is not available if the teacher makes any contribution whatsoever to a registered retirement savings plan.

In other words, a teacher may put as much as $7,000 a year into his registered pension plan providing he makes no contribution to a registered retirement saving plan in respect of that year. If he puts as much as one dollar into a registered retirement savings plan then the overall limit for his contributions to both pension and savings plans drops to $3,500.

i) *contributions to a registered retirement savings plan* (RRSP) — a teacher may choose to supplement his university pension by paying premiums into a registered retirement savings plan. Such premiums are deductible up to a limit of the lesser of 20% of his earned income and $3,500; minus the amount of his registered pension fund contributions including voluntary contributions in respect of current services, if any.

Again, a caution that the payment of any premium, however small, into a registered retirement savings plan will invalidate the teacher's right to contribute an additional $3,500 to his registered pension plan in respect of past services and his overall limit for both RPP and RRSP contributions will be set at $3,500.

For non-members of a registered pension plan the limit is the lesser of 20% of earned income and $5,500. (Subsection 146(5) « 684 »).

A taxpayer may also claim a deduction for payments into a retirement savings plan registered in the name of his spouse. In such cases, the limits described above will apply to the aggregate of his contributions to both plans. (Subsection 146(5.1) « 684a »).

In the past, some taxpayers have contributed tax deductible dollars to a spousal RRSP which would be immediately deregistered thus bringing the funds into the income of the spouse. Recent amendments now require that amounts contributed in the year and in the previous two years to a spousal plan must be included in the income of the contributor if withdrawn during the year. (Subsections 146(8.3), (8.5), (8.6) and (8.7) « 689c, 689e, 689f, 689g »). Interest on money borrowed to finance contributions to a registered retirement savings plan is deductible from income. Interest on borrowing in respect to premiums to a spousal plan is not deductible. The accumulated value of the fund may be converted into a pension on or after the annuitant's 60th birthday and on or before the end of the year in which he reaches age 71. The type and flexibility of the available pensions have recently been improved, subject to certain transitional provisions.

An article entitled "Income Tax and the Senior Citizen" has been published by CAUT and copies are available upon request from CAUT or OCUFA. The article deals with a number of income tax issues which are of particular interest to persons who are approaching, or who have reached retirement age.

j) *contributions to a registered home ownership saving plan* (RHOSP) — an individual who does not own a house may contribute to a RHOSP up to $1,000 a year for a total amount of $10,000. The contributor must be a Canadian resident and may take advantage of such a plan only once. Contributions are deductible from income, and the earnings of the fund are not taxable. Withdrawals will not be taxed if applied to the purchase of a home. A number of RHOSP changes effective after December 31, 1978 are as follows:

(i) if a taxpayer resides with his spouse and the spouse owns a dwelling, the taxpayer is ineligible for a RHOSP. (Paragraphs 146.2(2) (g) « 693d » and (5) « 693o »).

(ii) the right to purchase home furnishings with tax-free RHOSP funds has been withdrawn. (Subsection 146.2(6) « 693q »).

(iii) a RHOSP may not be held for longer than 20 years. (Subsection 146.2(8.1) « 693x »).

RHOSP funds will escape tax entirely if used for their designated purpose; in contrast to the RRSP where the tax is merely deferred. If the RHOSP funds are not eventually put to their intended use they may be withdrawn subject to tax or may be transferred into an income averaging annuity. (Section 146.2 « 693a-693w »). The right to transfer to an RRSP has been rescinded.

k) *moving expenses* are deductible only from the income of the new job and where the taxpayer has moved at least 25 miles closer to the new location. Expenses may include travel, transportation and storage of household effects, temporary lodging and meals, cancellation of a lease or cost of selling the former residence and in some circumstances the cost of purchasing a new home. (Paragraph 62(3) (f) « 319f »). There is a time limit of 15 days in respect of temporary lodging and meals and only moves within Canada qualify. (Section 62 « 316-319 »). (See Rev. Can. Tax pamphlet "Moving Expenses" and IT-178).

l) *child care expenses* may normally be claimed only by the mother although the father may be eligible under certain circumstances. Costs of baby sitting or day nursery services, lodging at a boarding school or camp qualify if they conform to the specified rules and are within the stated limits. Expenses must be incurred for the purpose of permitting the claimant to be employed or carry on a business. Only taxpayers resident in Canada, including those deemed resident (Paragraph 250(1) (a)) under the Income Tax Act, may claim child care expenses. Non-residents temporarily on foreign leave are not eligible even though they are deemed employed in Canada and are taxed on their Canadian earnings. In other words, sabbaticants who remain resident in Canada may deduct child care expenses but those who become non-resident may not. (Section 63 « 320-325 »). (See Rev. Can. Tax pamphlet "Child Care Expenses".)

Deductions from business income

Generally speaking, a taxpayer may deduct from business income those current expenses or costs which were incurred by him in order to earn the income, provided that the expense is reasonable, is not in the nature of a personal or living expense and is not for the purpose of obtaining a permanent asset of an enduring value, i.e., a capital outlay. Normally, allowable expenses must be incurred or paid during the same taxation year in which the income was earned.

Typical examples of expenses incurred by teachers to earn business income are books, journals, travelling, office supplies and facilities, telephone, postage, typing, photocopying and wages for part-time help. They must be prepared to document such expenses if requested to do so.

The computation of office expenses and the cost of the use of an automobile may be rather complex and will be described in some detail, as follows:

Office expenses

If a professor requires an office to earn business income and uses the office exclusively for earning business income, he may establish one in his home and deduct the proportion of total expenses reasonably related to earning the business income. If the house has eight rooms of which the office is one of average size, then one-eighth of all costs of maintaining the residence may be deductible.

The maintenance costs of the office may include a reasonable proportion of the realty taxes, repairs, redecorating, insurance, heat, light, water, cleaning and mortgage interest. Capital cost allowances (depreciation) on the office portion of the house are also deductible but it is recommended that they not be claimed for the following reasons:

(a) capital cost allowances are subject to recapture upon the sale of the property, or upon its conversion back to personal use, if no actual depreciation has occurred. Under present inflationary conditions depreciation in value is very unlikely to occur, which would nullify any advantage gained by claiming the allowances;

(b) a taxpayer who claims capital cost allowance renders himself liable to taxable capital gains upon the office portion of his home when he sells or converts to personal use. Full exemption from capital gains tax under the principal residence rule will be preserved if the taxpayer refrains from claiming capital cost allowance. (See IT-120R, paragraphs 27, 28 and 29).

Capital cost allowances on furniture and equipment may safely be deducted if the owner is confident that depreciation in the amount being claimed will actually occur during the period of business use. The rate under Class 8 is 20% and is applied to the fair market value at the time they were converted from personal to business use or at cost if acquired directly for business purposes. At the close of each year the capital cost allowance (depreciation) will be deducted from the capital value of the assets and the depreciation claim for the following year will be 20% of the residual balance which is described as the "undepreciated capital cost". (See example below).

Automobile expenses

Travelling expenses frequently include the costs of owning and operating an automobile which is used partly for business and partly for pleasure. A claim for the expenses requires some record of the total costs and of the portion reasonably allocable to business use. If requested, the taxpayer should be prepared to satisfy the Tax Department that he is entitled to the expenses claimed. He should be able to produce vouchers for the listed automobile expenses and to support both the total miles and the business miles travelled during the year. Therefore, it is a good idea to use credit cards as much as possible rather than cash and to keep receipts. Note that business use does *not* include travelling to and from work but only travelling in the course of carrying on the business, including out-of-town business trips. If a taxpayer's business office is in his home he may claim the costs of travelling between his office and the premises of his clients.

Operating expenses will include gasoline, oil, repairs, supplies, tires, parking, carwash, licence, finance costs and insurance.

Capital cost allowance may also be claimed at the rate of 30% of the undepreciated capital cost of the assets in the class, being the original cost less accumulated depreciation.

A mileage record should be kept and the cost per mile determined by dividing the total cost by total mileage. This unit mileage cost may then be applied to the number of miles travelled on business. (Substitute kilometres, if applicable).

If the taxpayer has traded in his car during the year he must add the purchase price of the new one to the undepreciated residue or undepreciated capital cost of the old car.

An example may clarify:

Car purchased in 1975 for	$4,500
Capital cost allowance for 1975 — 30% of $4,500	1,350
Undepreciated capital cost — December 31, 1975	3,150
Capital cost allowance for 1976 — 30% of $3,150	945
Undepreciated capital cost — December 31, 1976	2,205
Capital cost allowance for 1977 — 30% of $2,205	661
Undepreciated capital cost — December 31, 1977	$1,544

In 1978, the taxpayer traded this car in for a new one priced at $6,000. He paid $5,000 in cash and received a trade-in allowance of $1,000. The new capital cost is determined by adding the price of the new car to the undepreciated capital cost of the old car and then deducting the trade-in allowance. Hence, this new capital cost is $6,544 ($6,000 plus $1,544, less $1,000) and his capital cost allowance claim for 1978 will be $1,963 (30% of $6,544). A summary of this information may be recorded on Schedule 8 of the Individual Income Tax Return. His statement of automobile expenses for 1978 might be composed as follows:

Operating expenses		
Gasoline	$670	
Car wash	37	
Parking	37	
Repairs	100	
Licence	45	
Insurance	275	
Finance charges	225	$1,397
Capital cost allowance (30% of $6,544)		1,963
Total		$3,360
Mileage		
Old car — odometer reading when sold	40,000	
— odometer reading January 1, 1978	30,000	
Mileage for the old car	10,000	
New car — odometer reading December 31, 1978	6,000	
Total mileage for both cars for the year	16,000	

Cost per mile — 21 cents ($3,360 ÷ 16,000)
Total business use of the automobile for the year — 2,000 miles
Automobile expense claim — $420 (2,000 x 21)
In Quebec, the law on automobile expenses has been changed. Certain fixed expenses are no longer deductible. Therefore the above example on operating expenses does not apply in Quebec.

Business or professional fee income

Taxpayers must file a statement of business income and expenses with their income tax returns. For this purpose Form T2032 — Statement of Income and Expenses — is available from any District Taxation Office. The statement may cover a taxation year ending on December 31 or any other fiscal period ending which has been properly adopted by the taxpayer. (See "Fiscal year" below).

The following statement is a typical example:

Income Statement for the Year Ending December 31, 1978

Income — professional fees earned		$4,000
Expenses		
Office (see statement below)	$460	
Stationary and supplies	50	
Books and periodicals	200	
Professional society fees	60	
Automobile (see above)	420	
Total	1,190	
Capital cost allowance — furnishing (see below)	560	1,750
Net professional income		$2,250

Statement of office expenses

Realty taxes	$1,100
Interest on mortgage	1,600
Insurance	200
Heat	600
Telephone	150
Water	75
Light	55
Total	$3,680
One-eighth	$460

(Assuming that the office occupies one room of average size in an eight-room house.)

Statement of capital cost allowance — furnishings and equipment
Class 8 — 20%

Undepreciated capital cost — January 1, 1978	$2,000
Purchase — electric typewriter	850
	2,850
Less proceeds of disposal of old typewriter	50
Undepreciated capital cost — December 31, 1978	$2,800
Capital cost allowance for 1978 — 20% of $2,800	$ 560

Capital cost allowance has been deducted only in respect of furniture and equipment. No allowance has been claimed on the office portion of the residential building so as to avoid the possibility of recapture of depreciation and taxable capital gains when the property is sold or converted to personal use.

Fiscal year

If a taxpayer carries on a business he may adopt a fiscal year for reporting business income which may not coincide with the calendar year and which may result in a deferment of income tax payments. For instance, suppose the fiscal year of an unincorporated business ends on January 31, 1978. The income for the twelve months ending January 31, 1978 will not be reported by the taxpayer until he files his 1978 income tax return, in spite of the fact that 11/12ths of the business income was earned in 1977. Once a fiscal year has been established it may not be changed without approval of Revenue Canada, Taxation. (Subsection 248(1) "Fiscal period" « 1 »).

Accounting for professional income

Under the new Act the option of reporting income for professional services on a "cash" basis no longer prevails. Rather, the taxpayer must declare all such income in the year in which it becomes receivable regardless of whether or not it is actually received. An account for services rendered will be deemed to have become receivable on the date when the bill for services is presented; the date when the bill would have been presented if there were no delay in presenting it; or the date when payment is received; whichever is earliest. (Section 34 « 203-204 »). (See Revenue Canada, Taxation pamphlet, "Professional: Income Calculation".) In certain circumstances, an offsetting deduction may be claimed as a reserve against doubtful or bad debts or for goods or services still to be rendered in the future. (Paragraphs 20(1) (l) (m) and (n) « 129, 138, « 141 »).

Capital gains

The new Act provides that capital gains and losses arising from the disposition of certain kinds of property must be taken into account in determining income. The following situations may be of particular interest to university teachers.

(a) *Capital gain on the disposal of a residence containing an office.*

Generally speaking, no taxable capital gain will arise upon the disposal of a principal residence. If the dwelling contains a business office there will be no taxable gain if the taxpayer has refrained from deducting capital cost allowances from business income. (IT-120R, paragraph 27). However, if he has claimed capital cost allowances he renders himself liable to tax on one-half of the capital gain applicable to the office portion, as well as to recapture of the capital cost allowances claimed on it.

(b) *Deemed capital gain during the temporary rental of a principal residence.*

Residents of Canada

Normally, when a principal residence is rented it becomes susceptible to capital gains tax. (Subsection 45(1) « 259 »). The owner may, however, preserve principal residence status for a rental period not exceeding four years by electing under subsection 45 (2) « 262 ». This election has a limited benefit for persons who become non-resident during absences from Canada. The meaning of the recently amended paragraph 40(2) (b) « 251 » is obscure and Revenue Canada has not yet indicated how its provisions will be applied. It would appear that a sabbaticant who becomes non-resident for any period contained in a single taxation year or which spans two taxation years may escape capital gains tax by electing under subsection 45(2) « 262 ».

For further information regarding capital gains and residency status see section to follow entitled "Sabbaticals — Non-residents of Canada". A pamphlet "Canada Gains" is available from Revenue Canada, Taxation.

Scholarships, fellowships, bursaries, prizes and research grants

The Income Tax Act does not define the terms "fellowship", "bursary", "scholarship", "prize" and "research grant". However, Interpretation Bulletin IT-75R contains the Department's descriptions of these awards and its view of their treatment under the Act. The name applied to any specific grant may not be indicative of its true nature. For instance, in some circumstances an award bearing the title "fellowship" may be classified as a "research grant" for tax purposes. (IT-75R, paragraph 14).

Scholarships, fellowships, bursaries and prizes.

Paragraph 56(1) (n) « 287g » requires that the total of all amounts *received* during a year in respect of any or all of the above in excess of $500 must be included in income. Where a grantee receives payments of $500 or more in two successive calendar years, the $500 deduction may be claimed in each year resulting in a total deduction of $1,000. It may, therefore, be advantageous to ask the granting agency to pay these awards over two or more calendar years. Teachers and students are reminded that in some situations both moving and child care expenses may be deducted from these types of grants. (Sections 62 and 63 « 316-319, 320-325 »).

Research grants

As mentioned above, the aggregate of the bursary type awards received in a year is eligible only for the $500 deduction. (Paragraph 56(1) (n) « 287 g ») (IT-75R, paragraph 1). In contrast, awards deemed to be research grants for tax purposes must be declared as income to the extent that they exceed allowable research expenses. (Paragraph 56(1) (o) « 287h »). Personal or living expenses such as meals and lodging are normally not allowable, but may be deducted when they become part of travelling expenses incurred in carrying on the work away from home.

A researcher is entitled to claim his expenses of travelling (a) between his home and the place at which he temporarily resides while engaged in the research work; (b) from one temporary location to another; and (c) on field trips connected with his work. (IT-75R, paragraph 25). The Department has taken the position that a taxpayer may not claim the travelling expenses of his spouse and children. However, this condition has not been uniformly applied by Revenue Canada, with the result that many taxpayers have been allowed to deduct the full family travelling expenses to and from the scene of research. Since it is unreasonable to expect a sabbaticant to leave his wife and family at home for extended periods of time, their travelling expenses are arguably a cost of carrying on the research and should be included in the claim. Sabbaticants on leave within Canada should explore the possibility of their right to deduct moving and child care expense. Hotel expenses while seeking a more permanent abode should be included as well as any other expenses directly

associated with the project, such as the cost of research assistance, typing, photocopying, preparation and publication of reports and all other relevant expenses, other than personal or living expenses. Expenditures of a capital nature may be claimed. (IT-75R, paragraph 27).

Receipts for research expenses are not required to be filed with the taxpayer's income tax return. However, since an accounting may be demanded at any time, the researcher should keep a diary of all of his eligible expenses supported by receipts where practical.

Normally, expenses incurred in a year prior or subsequent to the receipt of a research grant are still deductible therefrom. An exception pertains to expenses arising in the year prior to the receipt of the grant and before notification that the grant has been awarded. In this particular circumstance the expenses may not be carried forward. (IT-75R, paragraph 26).

Although eligible research expenses may be deducted from a research grant they are not deductible from sabbatical salary nor from a fellowship, unless, of course, the fellowship is deemed to be a research grant. For instance, a Canada Council Doctoral Fellowship will not qualify as a research grant and is eligible only for the deduction of $500 in any taxation year regardless of the amount of research expenses actually incurred. Nor may any portion of such expenses be deducted from sabbatical salary.

Notwithstanding the above, a teacher may avoid an income tax assessment on funds used to defray research expenses by applying to his university for a research grant in lieu of all or part of his salary. Only the amount of the grant in excess of eligible research expenses will be taxed. This practice has been approved by Revenue Canada and all universities are familiar with the necessary procedures which should be completed in advance of the start of the sabbatical leave. (See 'Sabbatical leaves' below.)

It may be noted that the recipient of both a fellowship and a research grant may deduct $500 (or $1,000 if receipts span two calendar years) from his fellowship, as well as the total amount of his research expenses from his research grant.

Sabbatical leaves

Only the Canadian income tax aspects of sabbatical leave allowances will be dealt with in this section of the Tax Guide. A professor on a sabbatical or leave of absence in a foreign country must consider the income tax implications of the foreign jurisdiction as well as those of Canada. Some of the foreign tax problems will be described in the concluding sections of the Guide. A publication dealing with "Sabbatical Leave and Income Taxes" is available from CAUT or OCUFA.

Residency

A first consideration for a sabbaticant doing research or earning income outside of Canada is the determination of residency for income tax purposes. Since residency is not defined in the Act its determination must be based upon the facts underlying each individual case. The criteria used by Revenue Canada, Taxation are described in IT-221, "Determination of Residence for Individuals Leaving Canada".

A teacher who leaves Canada for six months or longer on leave of absence or on sabbatical will ordinarily be considered to have become a non-resident of Canada for income tax purposes "if he and his family left Canada and he disposed bona fide of his right to occupy his dwelling here, either by sale or lease for a time at least equal to the greater of six months and the time of the expected absence from Canada". On the other hand, if the teacher leases his residence "with the right to cancel on short notice or without notice, he would normally be viewed as a continuing resident". (IT-221, paragraph 2.)

From the above, it would appear that a temporary emigrant may influence or even determine his resident status by entering into the appropriate rental arrangement. If he leases unconditionally for his anticipated absence he will be considered a non-resident but if the lease is subject to cancellation by giving notice, he will remain a resident of Canada for income tax purposes. The position of apartment dwellers is not discussed in IT-221 but it seems likely that a teacher who terminates his lease or sublets irrevocably for the period of his absence will be deemed a non-resident, whereas he who sublets with the right to cancel on short notice will remain a resident of Canada.

Research expenses

A second consideration for a sabbaticant doing research is the arrangement of one's affairs so as to avoid the payment of income taxes on sums received to defray research expenses. Such arrangements will be related to residency status, as follows:

Sabbaticals — Residents of Canada. If a professor on sabbatical leave remains a resident of Canada for income tax purposes it does not matter whether he actually stays in Canada or emigrates temporarily to a foreign country. In either case, he will be taxed by Canada on his world income. If he is obliged to pay foreign income taxes on any part of his world income, Canada will normally permit a foreign tax credit for all or part of the foreign tax.

Sabbaticals — Non-residents of Canada. Non-residents are subject to Canadian income tax only on income received from sources within Canada. For most teachers the three main classes of Canadian source income are: (a) sabbatical salaries, business or professional income, research grants, fellowships, family allowances, etc., (b) investment income and (c) rental income. A taxpayer must file an individual income tax return in respect of the income included in class (a) above, (IT-75R, paragraph 30), and will be allowed personal exemptions accorded to residents in the ratio of his Canadian income to his world income. (IT-171, paragraph 4.) A discussion of the tax treatment of non-resident investment and rental income (b) and (c) above will follow.

Family allowances. Prior to 1974, family allowances were tax-exempt and were not payable to residents of Canada while they were sojourning outside the country except for very limited periods.

With effect from January 1, 1974, family allowances are subject to tax to the person who claims an exemption for the child for income tax purposes. At the same time, allowances will continue to be paid on behalf of an eligible child whose supporting parent is subject to Canadian income tax regardless of the absence of either the parent or the child from Canada. (See pamphlet "Family Allowances" published by the Department of Health and Welfare and available from any post office.)

Leaves of absence taken abroad

Sometimes professors accept teaching or other assignments in foreign countries under which the bulk of their income will be from sources outside Canada. If the teacher remains a resident of Canada for tax purposes he must declare and pay tax on his world income. If he establishes non-resident status he is then taxable in Canada only upon income from sources within Canada. He may, however, become taxable on part or all of his world income in his new country of residence.

Before jumping to conclusions regarding the advantages and disadvantages of non-resident status the taxpayer must consider his tax position in the foreign country as well as in Canada. A resident of Canada is entitled to a credit for income taxes paid to foreign countries. This credit will be the lesser of the foreign tax paid and the Canadian income tax otherwise applicable to the foreign income. This deduction is available only to residents of Canada and could not be claimed by a non-resident paying tax pursuant to Section 115 « 811-818 ». A taxpayer who plans to abandon temporarily his Canadian residency should consider his rights to claim a tax credit for Canadian income taxes under the tax laws of his new country of residence. This will become an issue only if the foreign country taxes visiting professors.

In some cases a foreign leave will be financed by a grant from a foundation based outside Canada. The funds may be channelled through a Canadian university and will be used to defray travelling expenses and to continue the professor's salary. If the teacher establishes non-resident status then the "source" of the funds used to pay his salary becomes critical. If the grants were paid directly to a non-resident teacher by a non-resident foundation they would not be subject to Canadian income tax. On the other hand, Revenue Canada maintains that where such funds are directed through a Canadian university they do constitute taxable income.

Canadian investment income of non-residents

With a few minor exceptions, dividends and interest payable to non-residents from sources within Canada are subject to withholding tax. The rates may be 5%, 10%, 15% or 25% depending upon the nature of the income and the provisions of any relevant international tax treaties.

The taxpayer may give notice of his non-residency to companies, banks and other institutions that pay him dividends and interest and direct them to withhold the tax and remit it to his District Taxation Office. Perhaps a more practical arrangement is to select an agent who will receive all his investment income and account to the Tax Office for the withholding tax. Many banks, trust companies and stock brokerage firms are familiar with the various rates of tax and the remittance procedures and will perform this service for their customers.

Canadian rental income of non-residents

If a non-resident owns his home and rents it during his absence from Canada, the rental income is subject to tax which may be paid in accordance with the following alternative procedures.

1(a) The taxpayer may arrange with an agent, or his tenant, to withhold and remit 25% (or 15%, if reduced by treaty) of the *gross* rents and may permit such remittances to constitute a complete discharge of his liability for income taxes on his rental income. (Paragraph 212(1) (d).) (The Quebec Taxation Act does not levy a withholding tax on payments to non-residents).

1(b) The non-resident may elect under Section 216 to pay tax on his net rental income at marginal rates applicable to residents but without personal exemptions for himself or dependants. He may exercise this option at any time within two years of the end of each taxation year in which the rents were received. The marginal rates for the taxation year will be applied to net income after deduction of all relevant expenses such as realty taxes; repairs, insurance, mortgage interest, agent's fees, capital cost allowances on furnishings, etc. If the tax on net income after deduction of expenses proves to be less than the 15% or 25% already withheld from the gross rents, then a refund of the excess may be claimed.

Capital cost allowances (depreciation) should not be claimed on the residence since they will only be recaptured upon reoccupation and they will also render the property subject to capital gains tax. Capital cost allowances on furniture and equipment may safely be deducted from rents if the owner is confident that depreciation in the amount being claimed will actually occur during the rental period. The rate is 20% and is applied to the fair market value of the furnishings at the time they were converted from personal use to rental property. At the close of each year the capital cost allowance (depreciation) will be deducted from the capital value and the depreciation claim for the following year will be 20% of the residual balance. (See example of capital cost allowance claim furnishings and equipment under the heading of "Business or professional fee income" above.)

For example, suppose a teacher rented his residence containing furnishings valued at $10,000 on September 1, 1978 under a lease running from September 1, 1978 to August 31, 1979. He would be entitled to claim capital cost allowances of $2,000 (20% of $10,000) from rental income received during the period September 1, 1978 to December 31, 1978. However, if the fair market value of the furnishings on August 31, 1979 turns out to be greater than $8,000 ($10,000 minus capital cost allowance of $2,000) then any excess of market value over $8,000 will be subject to recapture in 1979. If the fair market value should exceed $10,000 then taxable capital gains would also apply in 1979. The teacher will be entitled to no capital cost allowance for 1979 in any event since the property was not in use as a business asset on December 31, 1979.

2. As an alternative to the procedure described above the non-resident may elect to file DNR Form NR6 which is a joint undertaking by the non-resident and his agent to file an income tax return within six months after the end of the year. Under such an arrangement the agent is required to withhold and remit 25% (or 15%) of the estimated *net* amounts of rental income which became available to the non-resident. Then, when the income tax return is filed, the balance of the income tax owing, if any, must be paid, or a refund claimed if there has been an over-payment. A separate undertaking is required for each taxation year. (Subsection 216(4).) This possibility was discussed with respect to both residents and non-residents under the heading of "Capital gains" above.

Summary of advantages of non-resident status

As mentioned above the residency condition of a university teacher on sabbatical leave or leave of absence has now become somewhat beclouded. It would appear that if the teacher rents his residence on a monthly basis he will be considered to remain a resident of Canada for income tax purposes. On the other hand, if he rents under an irrevocable lease for the term of his absence he may be deemed to be a non-resident.

The advantage of becoming a non-resident for tax purposes has been substantially diminished by the new Act but the following advantages remain:
(a) Income received by non-residents from sources outside Canada is not subject to Canadian income tax.

(b) Withholding tax is applied to investment income paid or credited to non-residents at rates likely to be lower than the marginal rates imposed upon residents.
(c) Net rental income will probably be taxed at lower rates to non-residents than to residents.
(d) Non-residents may de-register Canadian registered retirement savings plans at a lower income tax rate than that applied to residents.
(e) Upon becoming non-resident a taxpayer acquires certain options regarding capital gains on his investments which, if judiciously selected, may result in less capital gains tax than he would pay as a resident.

Before seeking to establish non-resident status, a teacher should consider the combined effect upon his interests of both Canadian and foreign income taxes. Some of Canada's international tax agreements permit Canadians to do research in treaty countries free of foreign income tax on Canadian grants and sabbatical salaries. Some of the countries also exempt income derived from teaching within their borders. Similar exemptions from Canadian income tax are extended by Canada to foreign nationals teaching or pursuing research here.

Some of the issues of consequence to Canadians who plan to go abroad are discussed in the following sections.

Individuals temporarily absent from Canada should take note that general averaging is not available to non-residents.

Some Income Tax Implications of Foreign Sabbaticals and Leaves of Absence

Canada is currently engaged in extensive tax treaty negotiations and, in some instances, renegotiations.

As of November 1, 1978, Canada has ratified and proclaimed in force tax treaties with Australia, Belgium, Denmark, Dominican Republic, Finland, France, Germany, Ireland, Israel, Jamaica, Japan, the Netherlands, New Zealand, Norway, Pakistan, Philippines, Singapore, South Africa, Sweden, Switzerland, Trinidad and Tobago, the United Kingdom and the United States. Revised treaties have been negotiated with Germany and the United Kingdom but have not yet been proclaimed in force. In the meantime, the current agreements with these two countries remain in effect. Furthermore, new treaties have been negotiated with Austria, Liberia, Malaysia, Morocco and Spain which have not yet been proclaimed in force.

The basic purpose of these treaties is to avoid double taxation and prevent tax evasion. Invariably, a treaty will contain provisions that determine which of the contracting states will tax income from certain specific sources.

Canadian tax credit for foreign taxes

A teacher who remains a resident of Canada for income tax purposes will be taxed by Canada on his world income although the Canadian Income Tax Act gives him the right to claim tax credits in respect of any foreign income taxes regardless of whether or not a tax treaty exists between the two countries. Generally speaking, the foreign tax credit allowed by Canada will be the foreign tax paid, or the Canadian tax allocable to the foreign income, whichever is the lesser. As a result, a teacher who retains Canadian residency will be taxed only once on the foreign-source income but at the higher of the Canadian and foreign tax rates.

Elimination of double taxation

A teacher who becomes a non-resident of Canada but who continues to be taxed by Canada on sabbatical salary and grants is very unlikely to experience double taxation. If a foreign jurisdiction imposes a tax on such income the teacher will be exempted from Canadian income tax by virtue of clause 115(2) (e)(i)(A) « 816b » of the Act. (IT-161R, paragraph 1a). When a teacher first learns that a foreign tax will be imposed on such income he should induce his employer to apply to his District Taxation Office for a waiver of tax deductions at source and avoid the immediate cash drain of a Canadian withholding tax which in the normal course of events would be refunded. (IT-161R, paragraph 5.)

The O.E.C.D. Model Convention

For the most part, Canada's various tax agreements follow an internationally recognized form. In fact, a new Model Convention for the avoidance of double taxation was adopted by the Organization for Economic Co-operation and Development (O.E.C.D.) at Paris on April 29, 1977. Canada is a member of O.E.C.D. and many of Canada's tax treaties, particularly those recently negotiated, follow this model.

The Model Convention contains the following articles which may be of interest to teachers and students.

Article 4: Resident — The laws of each Contracting State will determine the meaning to be attached to the term 'resident' for income tax purposes within that State. The term will not apply to a person who is liable to tax in a State only because he has income from sources in that State or capital situated therein.

In the event of a person being classed as a resident of both Contracting States, various criteria are stipulated to determine his resident status. These are, location of a permanent home, habitual abode and nationality. If these criteria are not decisive then the two States will settle the question by mutual agreement.

Article 14: Independent personal services — Income derived by a *resident* of State 'A' in respect of independent personal services shall be taxable only in State 'A' unless he has a fixed base regularly available to him in State 'B'. In the latter case, State 'B' may tax such income as is attributable to that fixed base. The term 'fixed base' is not defined in the model convention but Revenue Canada has offered the opinion that it may be described as a 'centre of activity of a fixed or permanent character which should be regularly available to the person who is carrying out the activities. Furthermore, the person carrying on the activities should normally be in a position to exert a measure of control over the "fixed base". Independent personal services include such activities as consulting, research and any other service rendered under a non-employment type of contract where the remuneration is usually in the form of fees and not salary or wages. Fellowships, research grants and sabbatical salaries are normally classed as non-employment income for treaty purposes.

Article 15: Dependent personal services — Salary or wages derived by a resident of State 'A' in respect of an employment shall be taxable only in State 'A' unless the employment is exercised in State 'B' in which case it may be taxed in State 'B' subject to the following conditions:

The employment income of a resident of State 'A' earned in State 'B' will be taxable only in State 'A' if:
a) the recipient is present in State 'B' for not more than 183 days in the fiscal year, and
b) the remuneration is paid by an employer who is not a resident of State 'B', and
c) the remuneration is not borne by a permanent establishment or fixed base which the employer has in State 'B'.

Article 19: Government service — Salaries paid to residents by State 'A' present in State 'B' for the purpose of performing services in discharge of government functions shall be taxable only in State 'A'. Where such services are rendered by nationals of State 'B' or by persons who did not become residents of State 'B' solely for the purpose of rendering the services will be taxed only in State 'B'.

Article 20: Students — A student resident of State 'A' who visits State 'B' to study will not be taxed by State 'B' on maintenance funds received from sources outside State 'B' regardless of whether he remains a resident of State 'A' or becomes a non-resident.

General provisions

International treaties permit a taxing state to apply its own taxation laws and residency requirements as long as they do not conflict with the treaty. This may give rise to complications because of the differences which prevail between contracting states, placing an onus upon visitors to acquire some understanding of the local income tax laws and practices. However, the practical implications of Articles 14, 15, 19 and 20 appear to be that a teacher or student visiting a treaty country to carry on research or study will not be taxed in that country upon funds received from outside sources during his visit. On the other hand, a teacher or student will be taxed in that country on salary or wages earned therein, subject to the exceptions of Article 15.

Special exemption for teaching remuneration

The Model Convention no longer contains the provision by which one state will permit residents of another state to teach within its borders for a period of two years free of tax on their teaching income. The Department of Finance has declared that this privilege will not be included in any new tax treaties nor in any renegotiation of existing treaties.

As of November 1, 1978 this reciprocal exemption still prevails only in Canada's treaties with Australia, Denmark, Finland, Germany, Ireland, Japan, the Netherlands, New Zealand, Norway, South Africa, Sweden, Trinidad and Tobago, The United Kingdom and the United States.

Teachers visiting Canada from the foregoing countries will be subject to a withholding at source on teaching income and deductions for Canada Pension Plan and must file income tax returns. If, and when, a teacher's temporary stay in Canada is terminated he may apply for a refund of taxes paid on his teaching income and his Canada Pension Plan contributions. Because of the particular wording of the tax treaties involved, visitors from the United States, Finland and Australia may remain beyond the two-year limit and still qualify for the exemption as long as they teach for no longer than two years. (IT-68R, paragraph 3.) The Jamaican agreement grants the two-year exemption to Canadians teaching in Jamaica but not to Jamaicans teaching in Canada. New treaties which have eliminated the two-year teaching exemption have been negotiated with Germany and the United Kingdom but have not been proclaimed in force as of November 1, 1978. If and when ratified, these two agreements will become effective retroactively to 1976.

Residents of treaty countries teaching in Canada

A professor from a treaty country who is teaching in Canada should take note of his position with regard to income taxes in his homeland as well as his Canadian situation. These international agreements may provide exemption from Canadian tax on the teaching income of residents of the contracting states but may not absolve such individuals from liability for income taxes at home.

Canadian residents teaching in treaty countries

The agreements with the fourteen countries mentioned above, plus the Jamaican agreement, permit Canadians to teach temporarily in their territories for a period up to two years free of domestic taxes upon their teaching income. Professors planning to teach in any of these countries on a tax-exempt basis should enquire about the interim exemption arrangements which may be quite different from those applied in Canada.

The Canadian should bear in mind that the agreement exempts him from income tax only in the foreign country and not necessarily in Canada. If he remains a resident he will be subject to Canadian income tax on his world income. However, if he becomes a non-resident, he will not be taxable by Canada on income from sources outside Canada. Whether he may remain tax-exempt in the treaty country after he becomes a non-resident of Canada will depend upon the particular agreement of the country in question and its interpretation by local tax authorities. The situation should certainly be investigated by the Canadian teacher before making any commitments. He should also keep in mind that it is only a matter of time before the reciprocal two-year exemptions will be eliminated from all Canadian international tax treaties and possibly with retroactive consequences.

Foreign taxation

1. The United States

If a Canadian professor takes his sabbatical leave in the United States and spends a period of ten months, a year or fifteen months there with the intention of returning to Canada, the U.S. Internal Revenue Service would regard him as a non-resident alien. He is so classified because he is regarded as 'one who comes to the United States for a definite purpose which in its nature may be

promptly accomplished'. His income tax liability is limited to income from sources in the United States which is 'effectively connected with the conduct of a trade or business in the United States' which is taxable after allowable deductions at their graduated rates; or as 'income that is not effectively connected', which is taxable at a flat rate of 30%. However, by tax treaty this is reduced to 15% for all income (other than earned income) which is derived by Canadian residents from sources in the United States. A professor who plans to take his sabbatical leave in the United States will probably qualify as an exchange visitor. A non-resident alien in this category may exclude from income subject to U.S. tax the sabbatical salary paid to him by his Canadian university.

It is pertinent to note that if a person is a candidate for a degree at an American university, all amounts received as a scholarship or fellowship grant may be excluded from income for U.S. tax purposes regardless of whether the source is from within or outside the United States. However, any portion of the grant which represents compensation for teaching, research or other employment required as a condition of receiving the grant must be included in income unless all degree candidates must perform similar services. If a person is not a candidate for a degree, then a scholarship or fellowship grant in the U.S. is taxable to the extent it exceeds $300 per month multiplied by the number of months for which the grant has been received during the year. The $300 monthly exclusion from income is available only if the grant is made by a non-profit organization that is exempt from U.S. income tax, by the government of the U.S., or one of its agencies, or a state government, or by an international organization or a binational or multinational educational and cultural organization under the Mutual Educational and Cultural Exchange Act of 1961. The exclusion is limited to a total of 36 months, otherwise the entire amount of the scholarship or fellowship grant is subject to U.S. income tax. Scholarship and fellowship grants received by a Canadian professor who is a non-resident alien of the United States from a source in Canada would not be subject to U.S. tax unless they are regarded as compensation for services performed in the United States.

Article VII Compensation for personal services: The Canada-U.S. Tax Convention provides that if a Canadian resident is present in the United States for a period not exceeding a total of 183 days in the taxation year, he is exempt from U.S. tax upon the compensation for services performed during that year in the United States if either of the following conditions is met:
a) compensation does not exceed $5,000, or
b) the compensation is received from a Canadian resident, corporation or other Canadian entity or from a Canadian permanent establishment of a U.S. enterprise (in which case there is no dollar limit on the exemption).

Article VIIIA — Professors and teachers: The tax treaty also provides that a professor who is resident in Canada and who temporarily visits the United States for the purpose of teaching for a period not exceeding two years at an educational institution in the United States is exempt from tax on his remuneration for teaching for such period. It should be noted that the treaty refers to Canadian residents and therefore he who becomes a non-resident of Canada during his leave in the United States might prejudice his position although no cases of this eventuality have actually come to light.

Article IX — Students: Canadian students on temporary stay in the U.S. for the purpose of study shall not be taxable by the U.S. on remittances received by them from Canada for purposes of their maintenance or studies.

2. The United Kingdom

As mentioned above a new tax treaty has been negotiated with the United Kingdom which, when ratified, will have consequences retroactive to 1976. In the meantime, the current agreement continues in effect and contains the following provisions of interest to visitors from Canada to the United Kingdom and vice versa.

Article 13 — Independent personal services: (See Article 14 of the Model Convention above.) Income earned in the U.K. by a *resident* of Canada under a non-employment type of contract shall be taxed in Canada unless the visitor has a fixed base in the U.K. If such incomes should be taxed by the U.K. the individual may then claim a foreign tax credit from this Canadian tax. If the U.K. rate of tax is higher than the corresponding Canadian rate then only the lesser of the two rates will be allowed as a credit by Canada. If the visitor becomes a *non-resident* of Canada he shall not be taxed on his U.K. source income by Canada but will possibly be taxed thereon by the U.K.

Article 14 — Income from employment: (See Article 15 of the Model Convention above.) If the employment is exercised in the U.K. by a resident of Canada, it may be taxed in the U.K. However, salary from the U.K. employment shall continue to be taxed only in Canada if the following conditions prevail:

a) the recipient is present in the U.K. for not more than 183 days *during the U.K. taxation year which runs from April 6 of one year to April 5 of the next,* and

b) the remuneration is paid by or on behalf of an employer who is not a resident of the U.K., and
c) the remuneration is not deducted from the profits of a permanent establishment of fixed base which the employer has in the U.K.

Article 17 — Government service: (See Article 19 of the Model Convention above.) Salary paid by Canada to an individual present in the U.K. solely for the purpose of performing services for Canada in discharge of a government function shall be taxable only in Canada.

Article 18 — Professors and teachers: A teacher from Canada who visits the U.K. for the purpose of teaching at an educational institution for a period not exceeding two years shall be exempt from U.K. tax on his teaching remuneration. Unlike the corresponding provision of Article VIIIA of the Canada-U.S. Tax Convention, the exemption applies regardless of whether he remains a resident of Canada or becomes a non-resident. If he remains a resident of Canada for tax purposes he shall, of course, be taxable by Canada on his world income. If he becomes a non-resident he shall escape income tax in both countries on his U.K. teaching income.

Article 19(2) — Allowances for research: After an extended period of uncertainty, the income tax position of a professor doing research in the U.K. has been clarified. Inland Revenue of the U.K. has confirmed that an individual who is, or was before visiting the U.K., a resident of Canada will not be taxed in the U.K. on any grant, allowance or award for the primary purpose of research for a period not exceeding two years from a governmental, religious, charitable, scientific, literary or educational organization in Canada. Sabbatical salaries qualify as allowances.

The new treaty follows more closely the O.C.E.D. Model Convention. The basic changes affecting Canadian teachers visiting the U.K. are the elimination of the two-year teaching exemption and the allowance for research as described in Article 18 and 19(2) above. Under the new treaty, Articles 14 and 15 of the Model Convention will largely apply. Remuneration for teaching will likely be taxed in the country where the services are performed. Research grants and allowances will probably be taxed in the country where they originate.

Since some aspects of the new treaty will be retroactive to 1976 the question of reassessments may arise. However, section 4 of Article XXVIII provides that where an adverse tax treatment arises under the new Convention the old Agreement will apply in respect of taxation years commencing before entry into force of the 1978 Convention. This means that individuals currently visiting either country from the other in order to teach or carry on research will likely be taxed according to the terms of the existing Agreement.

3. France

The Canada-France Tax Convention (1975) substantially follows the O.E.C.D. Model Convention.

Article XIV — Professional services: is almost identical to Article 14 of the Model Convention. Income derived by a resident of Canada from *independent* professional services performed in France will be taxed only in Canada unless the professional operates from a fixed base regularly available to him.

Article XV — Dependent personal services: provides that salary or wages earned by a resident of Canada in France will be taxed by France unless the recipient is present in France for not more than 183 days in the calendar year and either (a) the remuneration does not exceed the greater of 2,500 Canadian dollars and 10,000 French francs or (b) the remuneration is paid by, or on behalf of, an employer who is not a resident of France, and such remuneration is not borne by a permanent establishment of a fixed base which the employer has in France.

Article XIX — Government services: follows closely the Model Convention. In general, residents of Canada performing government services in France for Canada will be taxed only by Canada.

Article XX — Students: Canadians visiting France solely for study or training will not be taxed by France on maintenance or educational funds received from outside sources regardless of whether they remain resident of Canada or become non-residents. *Professors and teachers:* The two-year tax holiday on teaching income still available in the U.S. and U.K. treaties is absent from the new Canada-France Tax Convention.

French residential tax: All persons of whatever nationality who maintain a regular residence in France are considered to be liable for taxation in France. The following are regarded as maintaining a regular residence:

a) all persons who possess a dwelling for their use, either as owner, enjoying the use of, as lessee, whenever in the latter case the lease is concluded either by a single agreement or by successive agreements for a continuous period of not less than one year.

b) all persons who, without having at their disposal in France a dwelling under the conditions defined in (a) of the above paragraph, but who, notwithstanding, have their principal place of abode in France. Although this idea of principal abode is not defined by law, it is generally considered that an alien has his principal abode in France whenever he remains there continously for more than six months of a given year.

It appears to follow that a Canadian professor, spending his sabbatical year in France will be regarded as a French resident and subject to French income tax.

Sabbaticants returning from France report that only if they have had income from sources within France has any French tax been levied. However, a person who is a resident in France but not permanently resident in France may be subject to an individual income tax on the higher of actual income from French sources or a presumed income in an amount equal to five times the rental value of his residence in France under article 164 of the French Tax Code. It appears that article 164 has not been used to tax professors on sabbatical leave and that its function is to levy a tax on persons who maintain luxurious secondary residences in France over a substantial duration.

Article XXIII — Elimination of double taxation: provides that a Canadian visitor to France may be subject to tax by either France or Canada, but not by both. Canada will recognize tax payable under French law as a deduction from Canadian tax payable in respect of the related income. France will exempt income taxable in Canada from French taxes.

General conclusion: Since the U.S., U.K. and French treaties are reciprocal the various tax impositions and exemptions will largely apply in reverse to residents of these countries visiting Canada. They will, however, be subject to Canadian income tax law and interpretations except where a conflict exists between local tax law and the treaty in which case the provisions of the treaty will prevail.

A Final Note

The Committee recommends that any CAUT members having problems concerning the application of the tax act go to their local DNR Taxation Office. If you feel that you have not been dealt with fairly by the Taxation Office, you may submit the problem to the CAUT although the CAUT will only take up your case if it represents a general and unsolved problem. The CAUT intends to go to DNR in order to establish rulings and regulations which are nationally consistent.

The Association is well aware that this Guide does not cover all income tax problems faced by all university teachers. The CAUT intends to carry on its work and complete or amend the guide by publishing regularly the results of its work in the CAUT Bulletin.

The Income Tax Guide for 1978 was prepared by Charles Hebdon, a professional officer, consultant on economic affairs at CAUT and OCUFA, with the help of M. James Drew (Hautes Études Commerciales) and Robert Léger (CAUT).

based on qualifications and experience. Inquiries should be addressed to: Dr. George W. Torrance, Chairman, Production and Management Science Area, Faculty of Business, McMaster University, Hamilton, Ontario. L8S 4M4.

LAURENTIAN UNIVERSITY. **School of Commerce and Administration.** The School of Commerce and Administration has positions available in Accounting, Finance, Quantitative Methods and Marketing. A Ph.D. is desired but not essential. Rank and salary will be based upon qualifications and experience. Preference will be given to bilingual candidates. Duties will commence January 1, 1979 and will include the teaching of courses at the undergraduate and Graduate Diploma level. Letters of application should be sent to: Professor D. J. Hilldrup, Director, School of Commerce and Administration, Laurentian University, Sudbury, Ontario, P3E 2C6.

DALHOUSIE UNIVERSITY. **School of Business Administration.** Appointment in Organizational Behaviour for September, 1979. Applications are invited from those interested in teaching Organizational Behaviour, Organizational Theory and Organizational Change at the undergraduate and graduate (MBA) level. Candidates with Ph.D. or Ph.D. in progress (A.B.D.) preferred. Teaching and strong research experience desired. Rank of appointment will be at the assistant/associate professor level and salary will depend on the candidate's qualifications. Please forward resumes to Dr. John H. Scheibelhut, Director, School of Business Administration, Dalhousie University, Halifax, Nova Scotia, Canada, B3H 4H8.

UNIVERSITY OF ALBERTA. **Faculty of Business Administration and Commerce.** Applications are invited for faculty positions from those with teaching and research interests in: business policy (2), marketing, finance, management science, and accounting. Ph.D. or equivalent is desirable. Both men and women are invited to apply. Salary and rank depend on qualifications. Applications welcome until positions are filled. Appointments normally effective July 1. Send resume to: Dr. Roger S. Smith, Dean, Faculty of Business Administration and Commerce. University of Alberta, Edmonton, Alberta, T6G 2G1.

QUEEN'S UNIVERSITY. **School of Business.** Assistant or Associate Professor(s). Positions open for term appointments for applicants holding Ph.D. Teaching and research duties in any of the principal fields of Accounting and Information Systems, Organizational Behaviour and Industrial Relations, Production and Operations Management, Business Policy, and Marketing. Competitive salary levels depending on experience. Send resume to: Dean J. R. M. Gordon, School of Business, Queen's University, Kingston, Ontario, K7L 3N6.

DALHOUSIE UNIVERSITY. **School of Business Administration.** Applications are invited for faculty positions in international business administration with teaching responsibilities in the MBA and B. Comm. programmes. Rank and salary are dependent upon professional and academic qualifications. Teaching and research in international business are supported by the Centre for International Business Studies. Direct inquiries to: Dr. D. J. Patton, Room 5110, Killam Library, Dalhousie University, Halifax, Nova Scotia. B3H 4H8. Tel. (902) 424-6553.

YORK UNIVERSITY. **Faculty of Administrative Studies.** Positions open commencing July 1, 1979 in the following areas subject to budget approval: Accounting, Finance and Marketing. Rank and salary are open. Successful candidates will be expected to be active in research and to teach in the Ph.D., Masters, and Undergraduate Programmes. Please submit curriculum vitae and references to: W.B. Crowston, Dean, Faculty of Administrative Studies, York University, 4700 Keele Street, Downsview, Ontario, M3J 2R6. Deadline for submission - when positions are filled.

YORK UNIVERSITY. **Faculty of Administrative Studies.** Positions open commencing July 1, 1979 in the following areas subject to budget approval: Behavioral Science, Business Policy, Economics, Management Information Systems, and Operations Management. Rank and salary are open. Successful candidates will be expected to be active in research and to teach in the Ph.D., Masters and Undergraduate Programmes. Please submit curriculum vitae and references to W. B. Crowston, Dean, Faculty of Administrative Studies, York University, 4700 Keele Street, Downsview, Ontario, M3J 2R6. Deadline for submission - when positions are filled.

BROCK UNIVERSITY. **Administrative Studies.** Applications are invited for new teaching positions. Candidates should have competence in one or more of the following areas: Management, Production / Management Science, Organizational Behaviour, Marketing, Industrial Relations. A Ph.D., a Ph.D. in progress, or the equivalent is preferred. Salary and rank will be commensurate with qualifications and experience. An application, including a curriculum vitae and the names of three referees, should be submitted to: J. R. Hanrahan, Director, School of Administrative Studies, Brock University, St. Catherines, Ontario L2S 3A1.

TRENT UNIVERSITY. **Administrative and Policy Studies.** 1. Assistant/Associate level. 2. Ph.D. or near completion. 3. Undergraduate teaching in the following areas: i) marketing, ii) finance, iii) organizational behaviour, iv) administration. 4. Competitive. 5. Professor H. M. Kitchen, Acting Director, Administrative and Policy Studies, Trent University, Peterborough, Ontario K9J 7B8. 6. July 1, 1979. 7. When position is filled. This appointment is subject to final budgetary approval.

UNIVERSITY OF SASKATCHEWAN. **College of Commerce.** The University of Saskatchewan, Saskatoon, Canada, invites applications for summer positions (1979), for one or two year visiting appointment in Accounting (effective July 1, 1979), and for a permanent position (effective January 1, 1980). Ph.D. preferred; Masters with professional qualifications acceptable. Rank and salary open. Present accounting faculty complement of thirteen hold Ph.D.'s from Michigan, Michigan State, Minnesota, Washington, and Missouri. Teaching load normally 2-3 courses per term over mid September to mid April academic year. Permanent faculty members expected to have strong research interests. Enquiries including current resume should be mailed to Dr. George C. Baxter, Accounting Area Chairman, College of Commerce, University of Saskatoon, Saskatoon, Saskatchewan, Canada, S7N 0W0.

UNIVERSITY OF SASKATCHEWAN. **College of Commerce.** Position available: Applications are invited for a full-time faculty position in Organizational Behaviour. Responsibilities: (1) Teaching at the undergraduate and graduate levels in Organizational Behaviour and, if qualifications and experience warrant, possibly in Industrial Relations and Personnel Management. (2) Research leading to acceptable forms of publication. Qualifications Requirements: Candidates must hold a Ph.D. degree or be at the completion stage of a degree which has as its focus the study of Organizational Behaviour. Study, research, and teaching experience in industrial relations and in the behavioural sciences would also be appropriate. Salary and effective date of appointment: will be competitive and based upon academic qualifications, including prior teaching experience, business experience, and research and publication record. To be effective July 1, 1979. Interested candidates should send resumes to: Dean P. Michael Maher, College of Commerce, University of Saskatchewan, Saskatoon, Canada, S7N 0W0.

McMASTER UNIVERSITY. **Faculty of Business.** Policy Area. A position at the Assistant or Associate level. Quantitative background, experience in business gaming, research and executive development are required. Ph.D. required. Salary is competitive. Write to: Dr. Robert C. Joyner, Faculty of Business, McMaster University, Hamilton, Ontario, L8S 4M4.

DALHOUSIE UNIVERSITY. **School of Business Administration.** Applications are invited for two positions in Marketing. Doctorate or A.B.D. is required, with preference given to persons with research interest. Teaching interests in the areas of Consumer Behavior, Sales Management, International Business and Retailing. Send resume to Prof. P.J. Rosdon, School of Business Administration, Dalhousie University, Halifax, Nova Scotia, B3H 4H8.

UNIVERSITY OF REGINA. **Faculty of Administration.** Accounting position open at any rank, based on overall qualifications. Preference to Ph.D./D.B.A. but will consider M.B.A./M.Sc. plus professional accounting designation. Salary is fully competitive. The Faculty's preference is for a senior person with significant experience and a good record of scholarly work. There are excellent opportunities for professional involvement for those persons interested in such opportunities. This is an excellent opportunity for professors who would like to escape from the constraints of rigid departmentation and to work in an open, interdisciplinary environment. Interested candidates should send c.v. and names of referees to Dean, Faculty of Administration, University of Regina, Regina, Sask., S4S 0A2. Effective date of appointment is July 1, 1979.

UNIVERSITY OF REGINA. **Faculty of Administration.** General Management and some combination of marketing, finance, public administration, personnel and industrial relations. Rank and salary are open, depending on qualifications; salaries are fully competitive. Preference will be given for Ph.D./D.B.A. and appropriate managerial/organizational experience. Interested candidates should send c.v. and names of referees to Dean, Faculty of Administration, University of Regina, Regina, Sask., S4S 0A2. Effective date of appointment is July 1, 1979.

CHEMISTRY

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. **Department of Chemistry.** Postdoctoral research position in photoelectrolysis of water or hydrogen storage in metal alloys. Experience is desirable in at least one of: electrochemistry, photoconductivity, semiconductor surface chemistry or the chemistry of metallic hydrides. Salary in the range $925 to 990 per month. Applications with curriculum vitae and the names and addresses of three references should be sent as soon as possible to Dr. F.R. Smith, Department of Chemistry, Memorial University of Newfoundland, St. John's, Newfoundland, Canada, A1B 3X7.

UNIVERSITY OF OTTAWA. **Department of Chemistry.** Assistant Professorship in Organic Chemistry. The Department expects to proceed to the appointment of an Assistant Professor of Organic Chemistry, bilingual in the French and English languages, in a tenure-track position. The successful candidate must be able to lecture fluently in both languages and should anticipate developing active research in his field of interest. Excellent instrumental and other facilities are available. A competitive salary will be offered. Applications, in five copies, including a curriculum vitae, publications list and the names of three referees should be sent to: Professor B.E. Conway, Chairman, Chemistry Department, University of Ottawa, Ottawa, Ontario, K1N 9B4, Canada.

UNIVERSITY OF ALBERTA. **Department of Chemistry.** Applications are invited from highly qualified men and women for the position of Chairman for a five year term and Professor with tenure, commencing July 1, 1979. Applications including curriculum vitae and the names of at least three references may be sent before March 15, 1979 to K.B. Newbound, Dean of Science, University of Alberta, Edmonton, Alberta, T6G 2E9.

UNIVERSITY OF VICTORIA. **Department of Chemistry.** Graduate Studies in Chemistry. All students accepted will receive financial support ranging from a minimum of $6,600 up to a maximum of $9,800 (with only half the normal demonstrating duties) for highly qualified students. The Department has excellent facilities for research. A brochure describing the department and faculty research interests is available upon request. Enquiries about Co-operative Graduate Degree Programs, in collaboration with Canadian Industries, are invited. Applications should be directed to: Dr. A.D. Kirk, Chairman, Department of Chemistry, University of Victoria, P.O. Box 1700, Victoria, B.C., V8W 2Y2.

UNIVERSITY OF VICTORIA. **Department of Chemistry.** Postdoctoral Research. A number of postdoctoral / research associate positions are available. In particular applications are invited for: Photochemistry of Inorganic Complexes, A. D. Kirk; Organometallic and Coordination Chemistry of Transition Metals, K. R. Dixon; Fluxional organometallic molecules; asymmetic catalysis by transition metals, S.R. Stobart. Postdoctoral positions are tenable initially for one year, renewable, at rates up to the maximum allowed by the NSERC grant regulations. Applications should be directed to: Dr. A.D. Kirk, Chairman, Department of Chemistry, University of Victoria, P.O. Box 1700, Victoria, B.C., V8W 2Y2.

UNIVERSITY OF TORONTO, SCARBOROUGH COLLEGE. **Chemistry Group.** A one year limited-term appointment in Physical Chemistry or Chemical Physics, probably at the Assistant Professor level. Doctorate required. Salary according to qualifications and experience. The duties will include undergraduate teaching and research. Appointment to commence 1 July or 1 September 1979. Send curriculum vitae and names of three referees to: Professor John E. Dove, Chairman, Physical Sciences Group, Scarborough College, University of Toronto, 1265 Military Trail, West Hill, Ontario, M1C 1A4, Canada.

CLASSICS

McGILL UNIVERSITY. **Department of Classics.** A possible opening at the rank of Faculty Lecturer (sessional) in modern Greek for one or two academic years, beginning September 1, 1979. Salary is $8,000 - $9,000 per annum. A recent Ph.D. in modern Greek with a knowledge of ancient Greek is preferred. To teach undergraduate courses in modern Greek language, literature and civilization. Applicants should forward a copy of their curriculum vitae, and photocopies of the original of their degrees at their earliest convenience. Applicants should also ask three referees to write on their behalf. The formal deadline for receipt of the completed dossier is March 2, 1979. Write: Chairman, Department of Classics, McGill University, 855 Sherbrooke Street W., Montreal, Quebec, H3A 2T7.

UNIVERSITY OF CALGARY. **Department of Classics.** Applications are invited for one or more positions for the academic year 1979-80. These are temporary positions, to replace staff on leave. They will be at the rank and salary of Assistant Professor ($18,868 - $24,678). The appointments are tenable from July 1 or September 1, 1979. Initially, they are for one year only, with no guarantee of renewal. However, budget willing, it may be possible to renew for a second year. The successful candidates will be expected to teach a variety of courses in Greek and Latin, in literature, in translation courses, and in civilisation courses. Preference may be given to candidates specializing in Greek and Roman art and archaeology for one of the positions. To expedite the procedures, candidates are requested to arrange for three referees to forward confidential letters of appraisal as soon as possible. Address all correspondence to Dr. Barry Baldwin, Head, Department of Classics, University of Calgary, Calgary, Alberta T2N 1N4.

UNIVERSITY OF VICTORIA. **Department of Classics.** The Department of Classics invites applications for the position of sessional lecturer for the period September 1, 1979 — April 30, 1980. The successful candidate will be expected to teach undergraduate courses in Greek, Latin and Classical Studies. The appointment is contingent upon the availability of adequate funding. Applicants should send a curriculum vitae to the Chairman, Department of Classics, University of Victoria, Victoria, B.C., Canada, V8W 2Y2 by March 2, 1979, and should ask three referees to write to the Chairman on their behalf.

COMMUNICATION

CONCORDIA UNIVERSITY. **Department of Communication Studies.** Area: Television. Qualifications: Ph.D. or equivalent qualification preferred. Candidates should have experience in studio production, as well as scholarly interest in a particular field such as theory, criticism, policy and legislation, aesthetics, writing. Preference will be given to candidates familiar with the development of Canadian

broadcasting and communications. Principal Responsibilities: To conduct television seminar / practicum courses at the undergraduate and graduate-Diploma levels; to conduct courses in the candidate's particular field of additional competence. Rank: Assistant Professor (Possibility of Associate Professor rank). Salary: Present floor, Assistant Professor, $19,853. Appointment Beginning: Academic year 1979-80. Applications: Considered as received; closing date for receipt of applications: March 1, 1979. Send letter of interest and curriculum vitae to: Personnel Committee, Department of Communication Studies, Concordia University, 7141 Sherbrooke Street West, Montreal, Quebec, H4B 1R6.

SIMON FRASER UNIVERSITY. **Department of Communication.** Chairman, Department of Communication. This Department, which has graduate and undergraduate programs, studies communication primarily as an interdisciplinary social science and is located in a Faculty of Interdisciplinary Studies. Scholarly achievement in the field of communication is expected, although not necessarily in a communication department. While such achievement may be concentrated in one area (e.g. telecommunications, interpersonal, political, social, organizational, systems, policy, critical analysis of media, etc.), sympathetic interest in the whole field and to the orientation of the existing program is required. Administrative experience is desireable and Canadian experience preferred. Rank and salary are dependent on qualifications. Submit vitae, names and addresses of 3 referees, and reprints to Dean Thomas W. Calvert, Faculty of Interdisciplinary Studies, Simon Fraser University, Burnaby, British Columbia, V5A 1S6, from whom further information can be obtained.

COMMUNICATION DISORDERS

DALHOUSIE UNIVERSITY. **School of Human Communication Disorders.** Assistant Professor, Audiology-Aural Rehabilitation commencing September 1979 or sooner. Salary in accordance with experience and qualifications. Ph.D (A.B.D. considered). Must meet requirements for membership in the Canadian Speech and Hearing Association. To teach courses and supervise practicum in all phases of Aural Rehabilitation to students pursuing the M.Sc. degree in Audiology or Speech Pathology. Expertise in the areas of auditory training and speech reading in addition to counselling and development of community programmes essential. Background in basic clinical audiology required. Send application, current curriculum vitae, and names of three referees to: Dr. Michael Webster, Director and Professor, School of Human Communication Disorders, Dalhousie University, Ground Floor, Fenwick Tower, Halifax, Nova Scotia, B3H 3J5.

COMPUTER SCIENCE

UNIVERSITY OF TORONTO, SCARBOROUGH COLLEGE. **Computer Science Group.** Tenure stream appointment, probably at the Assistant Professor level, at the University of Toronto's campus at Scarborough, Ontario. Applicants must have a Ph.D. degree in Computer Science. The duties will include teaching at the undergraduate level and (in collaboration with the University's Department of the Computer Science at the main campus) at the graduate level, and research. Preference will be given to applicants in the areas of data bases, computer graphics, programming languages, or operating systems. Send curriculum vitae and the names of three referees to: Professor John E. Dove, Chairman, Physical Sciences Group, Scarborough College, University of Toronto, 1265 Military Trail, West Hill, Ontario, M1C 1A4, Canada. Appointment to commence July 1, 1979.

UNIVERSITY OF CALGARY. **Department of Computer Science.** Applications are invited for a faculty position at the Assistant or Associate Professor level. This position is expected to be available, subject to budget approval. Applicants should have a Ph.D. degree in Computer Science or a related discipline, or should expect to complete such a degree before the 1979-80 academic year. Preference will be given to applicants with research interests in one of the following year. Preference will be given to applicants with research interests in one of the following areas: Graphics, Computer Architecture, Computer Networks, Real-Time Systems or Data Base Management. Enquiries and applications, the latter including a curriculum vitae and the names of three references, should be sent to: Dr. A. W. Colijn, Head, Department of Computer Science, The University of Calgary, 2920 - 24 Ave. N.W., Calgary, Alberta, T2N 1N4, Canada.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND, REGIONAL COLLEGE AT CORNER BROOK. **Computer Science / Mathematics.** Undergraduate teaching position required for September 1, 1979. Besides teaching Computer Science courses, the successful applicant may be responsible for teaching a first or second year Mathematics course. The Computer Science courses will introduce second-year students to such topics as computers and their use; interactive computing; the BASIC programming language; batch processing; the FORTRAN programming language, and applications of these languages to the computer solution of problems. The College offers first and second year university courses. Minimum Educational Requirement - M.Sc. Salary and rank dependent upon qualifications and experience. Curriculum vitae and names of three referees to: Mr. R. J. F. Hodgett, Vice Principal, Memorial University of Newfoundland, Regional College at Corner Brook, Corner Brook, Newfoundland, A2H 6P9.

UNIVERSITY OF GUELPH. **Department of Computing and Information Science.** Applications are invited for a probationary appointment at the Assistant Professor level in Computing and Information Science, before April 13, 1979. Candidates must have a Ph.D. degree in computing science or allied discipline. Teaching and / or industrial experience with a research commitment in applied system analysis or data base technology are desirable. Duties will include undergraduate teaching in introductory courses as well as any of the following: computer structures, operating systems, data bases, system analysis, programming languages, software engineering and data communications. Salary will commensurate with qualifications and experience. Subject to final bugetary approval. Applicants should provide a complete curriculum vitae with the names of three referees to J. G. Linders, Chairman, Department of Computing and Information Science, University of Guelph, Guelph, Ontario, N1G 2W1.

SIMON FRASER UNIVERSITY. **Computing Science Department.** Three tenure-track positions in Computing Science are available starting in September 1979. A Ph.D. in Computing Science (or equivalent) is required with specialization in one or more of the following areas: Interactive Graphics, Analysis of Algorithms, Software Engineering. Responsibilities will include teaching at the undergraduate and graduate levels, research, and the usual administrative activities. The department has an interactive graphics laboratory including an Evans and Sutherland picture system and also mini-computer, microprocessor, and hardware laboratories. The university has a central computing facility supporting both MTS and OS. Applications will be received until the positions are filled; all appointments are subject to the availability of funds. To apply, send curriculum vitae and the names of three references to: Prof. James J. Weinkam, Computing Science Department, Simon Fraser University, Burnaby, B.C., V5A 1S6. (604) 291-4277. Please state the area in which you are applying.

DANCE

SIMON FRASER UNIVERSITY. **Centre for the Arts. Dance.** Simon Fraser University expects to appoint a Lecturer in Dance, to begin teaching duties in September, 1979 for a two year term. Responsibilities will include teaching contemporary dance technique, improvisation, and composition within a developing dance program. Qualifications should include substantial training and experience in contemporary dance and a demonstrated ability and interest in teaching. Professional dance experience, university degrees, and competence in other areas of dance study are desirable but not essential. Salary base: $18,600. The availability of this position is subject to budgetary constraint. Simon Fraser is particularly interested in receiving applications from Canadians or individuals with substantial Canadian experience. Letters of application should be sent to Professor Evan Alderson, Director, Centre for the Arts, Simon Fraser University, Burnaby, British Columbia, V5A 1S6.

DENTISTRY

UNIVERSITY OF SASKATCHEWAN. **College of Dentistry.** Applications are invited for a full-time position in the Department. The applicant should have a dental degree and post-graduate training in dental research. We are looking for an individual with broad-based interest and teaching experience in "oral biology" who can strengthen one or more of our teaching and research areas. Emphasis will be placed on the potential of the individual to develop collaborative research within the College. The Department teaches anatomy, physiology, biochemistry, microbiology and pathology in relation to the oro facial complex and the program extends the entire five years of the undergraduate dental curriculum. Clinical involvement is actively encouraged. Salary will be determined according to qualifications and experience. Letters of application, curriculum vitae and the names of three individuals from whom references can be obtained should be sent to: Dr. E. R. Ambrose, Dean, College of Dentistry, University of Saskatchewan. Saskatoon, Saskatchewan. S7N 0W0. Canada.

UNIVERSITY OF TORONTO. **Faculty of Dentistry.** The Faculty of Dentistry, University of Toronto, seeks applications for a professorial position in the tenure stream. The applicant should have a D.D.S. degree (or equivalent) and a higher degree in the discipline of oral pathology. The successful candidate will be expected to assist in the teaching of oral pathology and oral medicine, with some clinical duties and also undertake research. Rank and salary negotiable. Applications are invited before March 15, 1979. Applications should be submitted to Dr. R.L. Ellis, Faculty of Dentistry, University of Toronto, 124 Edward Street, Toronto, Ontario, M5G 1G5. Canada.

ECONOMICS

UNIVERSITY OF NEW BRUNSWICK. **Department of Economics.** Applications are invited for a position as lecturer or Assistant Professor. Ph.D. or near completion. Duties — graduate and undergraduate teaching, and research interest in resource economics. Send curriculum vitae and names of three referees to: Chairman, Department of Economics, University of New Brunswick, P.O. Box 4400, Fredericton, New Brunswick, E3B 5A3.

CONCORDIA UNIVERSITY. **Department of Economics.** Possibility of two appointments effective January - June 1979 at ranks commensurate with the candidate's qualifications. Applicants with main or secondary specialization in one or more of the following areas are invited to apply: Economic Development, Econometrics-Statistics, General Theory, Industrial Relations-Labour Economics, Monetary Economics, and Public Economics. Graduate and undergraduate teaching and supervision of Ph.D. dissertations. Salaries are fully competitive. Forward applications to Dr. B. Sahni, Chairman, Department of Economics, Concordia University, 1455 de Maisonneuve Blvd. W., Montreal, Quebec H4B 1R6.

UNIVERSITY OF SASKATCHEWAN. **Department of Economics and Political Science.** The Department of Economics and Political Science at the University of Saskatchewan invites applications for tenure track positions in Economics open at the Assistant Professor level. All fields of specialization will be considered; however one position requires teaching and research interests in labor economics. Responsibilities include teaching graduate and undergraduate classes and research. Salary will range upwards from $18,145 depending upon qualifications and experience. Starting date: July 1, 1979. Applicants are initially asked to submit their curriculum vitae, names of three referees, and a sample of their current written work to: Professor J.C. Stabler, Chairman, Department of Economics and Political Science, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

UNIVERSITY OF LETHBRIDGE. **Department of Economics.** 1. One position. 2. Assistant or Associate Professor. 3. The minimum requirement is a Ph.D. or near completion. Specialists in the areas of economic development, industrial organization, international economics and monetary economics will be considered. 4. Teaching duties will be at the undergraduate level. 5. Salary scale: 1978-79: Assistant Professor — $19,283 - $24,686 (78-79) salary scale. Associate Professor — $24,691 - $32,022 (78-79) salary scale. Up to one-year terminal position beginning July 1, 1979, 6. Application with curriculum vitae and three references should be submitted to: Dr. S. G. Clarke, Chairman, Department of Economics, University of Lethbridge, 4401 University Drive. Lethbridge, Alberta, T1K 3M4. 7. Deadline: 30 April 1979.

UNIVERSITY OF NEW BRUNSWICK. **Department of Economics.** Applications are invited for a position as lecturer or Assistant Professor. Ph.D. or near completion. Duties — graduate or undergraduate teaching, and research interest in resource economics. Send curriculum vitae and names of three referees to: Chairman, Department of Economics, University of New Brunswick, P.O. Box 4400, Fredericton, New Brunswick, E3B 5A3.

UNIVERSITY OF GUELPH. **Department of Economics.** Department of Economics, University of Guelph, Guelph, Ontario, seeks Associate or Full Professors for one year visitorships starting September 1, 1979. Salary and precise duties subject to negotiation. Considerable teaching experience and research publications required. Contact: J. Vankerkamp, Chairman, University of Guelph, Department of Economics, Guelph, Ontario, N1G 2W1. Position subject to final budgetary approval.

UNIVERSITY OF MANITOBA. **Department of Economics.** Possibility of a tenure-stream and one or more sessional appointments at Assistant Professor, or higher rank for distinguished applicants. Candidates should have Ph.D. or equivalent, with expertise in the following areas preferred: Labour Economics, Macroeconomics, Monetary and International Trade. Familiarity with the Canadian economy is an asset. The position involves research and teaching at undergraduate and possibly graduate levels. Salary is competitive. Applicants should send their C.V. with the names of three references to: Dr. N.E. Cameron, Department of Economics, The University of Manitoba, Winnipeg, Manitoba, R3T 2N2. Applications will be accepted until the position is filled. Availability of the position is subject to budgetary approval.

YORK UNIVERSITY. **Economics Department.** Applications invited for faculty positions open in September, 1979 subject to budget availability. Graduate and undergraduate teaching and research. Rank and salary open. Doctorate or near completion required. Contact: Dr. G.H. McKechnie, Chairman, Department of Economics, York University, 4700 Keele Street, Downsview, Ont. M3J 1P3. Tel.: (416) 667-2362.

MCMASTER UNIVERSITY. **Department of Economics.** The Department of Economics at McMaster has one or more visiting positions at the assistant or associate professor rank for the 1979-80 academic year, commencing July 1, 1979. Applicants are normally expected to have a full time continuing appointment at another institution. Applications, including curriculum vitae should be sent to Dr. J.A. Johnson, Chairman, Department of Economics, McMaster University, Hamilton, Ontario, L8S 4M4.

ALGOMA UNIVERSITY COLLEGE. **Department of Economics.** Probationary appointment in Economics commencing July 1, 1979, in the fields of Microeconomics, Quantitative Methods for Economists, and Canadian Economic Problems and Policy or Economic Development. Other fields such as In-

ternational Trade and Macroeconomics will be considered. Rank and salary open and competitive. Application, official transcripts and curriculum vitae should be accompanied by the names of three referees, and forwarded to Dr. M. Akram Rajput, Chairman, Social Sciences Division, Algoma University, College, Sault Ste. Marie, Ontario.

SIMON FRASER UNIVERSITY. **Department of Economics and Commerce.** Simon Fraser University has positions open in the following fields: 1. Business Administration: (A) Accounting/Management Information Systems (Assistant or Associate Rank), (B) Organization Behavior (Assistant or Associate), (C) Business and Society (Assistant), (D) Management Science (Assistant), (E) Business Policy (Assistant or Associate). 2. Economics: (A) Economics Theory (Associate or Full rank), (B) Applied Economics (Assistant), (C) Resource Economics (Assistant). All positions contingent on budgetary constraints. Salary negotiable. Ph.D. in hand or near completion. Preference given to those eligible for employment in Canada at time of application. Duties include undergraduate and graduate teaching and research. Starting date September 1st 1979 or otherwise by agreement. Send curriculum vitae and names of three referees to: Dr. William C. Wedley, Associate Chairman, Department of Economics and Commerce, Simon Fraser University, Burnaby, B.C., Canada V5A 1S6.

SIMON FRASER UNIVERSITY. **Department of Economics and Commerce.** (A) Economics theory (Associate or Full rank) (B) Applied Economics (Assistant) (C) Resource Economics (Assistant). All positions contingent on budgetary constraints. Salary negotiable Ph.D. in hand or near completion. Preference given to those eligible for employment in Canada at time of application. Duties include undergraduate and graduate teaching and research. Starting date September 1st 1979 or otherwise by agreement. Send curriculum vitae and names of three referees to: Dr. William C. Wedley, Associate Chairman, Department of Economics and Commerce. Simon Fraser University, Burnaby, B.C., Canada V5A 1S6.

UNIVERSITY OF LETHBRIDGE. **Department of Economics.** 1. One position. 2. Assistant or Associate Professor. 3. The minimum requirement is a Ph.D. or near completion. Specialists in the areas of economic development, industrial organization, international economics and monetary economics will be considered. 4. Teaching duties will be at the undergraduate level. 5. Salary scale: 1978-79: Assistant Professor — $19,283 - $24,686 (78-79) Salary scale. Associate professor — $24,691 - $32,022 (78-79) salary scale. Up to one-year terminal position beginning July 1, 1979. 6. Application with curriculum vitae and three references should be submitted to: Dr. S.G. Clarke, Chairman, Department of Economics, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 0M4. 7. Deadline: 30 April, 1979.

UNIVERSITY OF WATERLOO. **Department of Economics.** Applications are being accepted for the position of Lecturer or Assistant Professor (two positions) the rank depending upon the qualifications of the appointee. Completion or near completion of the Ph.D. degree is required. Excellent teacher of undergraduate and graduate economics wanted. Areas of specialization preferred: international trade, comparative economics systems / soviet economics, mathematical economics. Salary $16,000-$21,000 depending upon education and experience. Appointment will be from September 1, 1979. Write to: Dr. John H. Hotson, Chairman, Department of Economics, University of Waterloo, Waterloo, Ontario. N2L 3G1. (First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position. Availability of this position is subject to budgetary approval.)

UNIVERSITY OF GUELPH. **Department of Family Studies.** 1. Assistant or Associate Professor. 2. Ph.D., with some university teaching preferred. 3. Undergraduate and graduate teaching and research in family and consumer economics. Experience in the development or analysis of social and economic policies which affect the family (e.g. welfare economics, evaluation of public policy, income support for the elderly) will be an advantage. Candidates should have an interest in working in a multidisciplinary environment. 4. Salary open and competitive. 5. Send full curriculum vitae and names of three referees to Dr. R. M. Barham, Chairman, Department of Family Studies, University of Guelph, Guelph, Ontario, N1G 2W1. 6. Appointment effective July 1, 1979. Position subject to final budgetary approval. 7. Position open until filled.

EDUCATION

UNIVERSITY OF MANITOBA. **Faculty of Education.** 1. Assistant or Associate Professor. Sociology of Education; 2. Doctoral degree or equivalent. Academic experience in Sociology of Education, preferably with related work in Cross-Cultural Education; 3. Teaching at undergraduate and graduate levels; participation in the interdisciplinary research and professional development programs of the department; 4. dependent upon qualifications and experience; 5. Full curriculum vitae and names of three referees to Head, Department of Educational Administration and Foundations, Faculty of Education, University of Manitoba, Winnipeg, Manitoba, R3T 2N2; 6. 1 September 1979; 7. 15 March 1979, or when filled.

UNIVERSITY OF SASKATCHEWAN. **College of Education.** Position: Assistant Professor of Education (Continuing Education) if funds are made available. Qualifications: At least a Master's degree with a doctorate preferred in Continuing or Adult Education. Nature of Duties: Responsibilities for undergraduate and graduate teaching and thesis supervision. Areas of responsibility may include Adult Basic Education, Psychology of Adult Learning and Community Dvelopment. Salary: Scale: Assistant Professor 18,415 to 23,365. Applications: A letter of application, Curriculum Vitae and names of three referees should be sent to Dr. R. E. Y. Wickett, Head, Department of Continuing Education, College of Education, University of Saskatchewan, Saskatoon, S7N 0W0.

UNIVERSITY OF LETHBRIDGE. **Faculty of Education.** 1. One year appointment in Educational Foundations, subject to the availability of funds. Rank open. Salary dependent upon qualifications, university and school experience. 2. Experience and qualifications appropriate to the teaching of undergraduate courses in the History of Education and Comparative Education. 3. To offer courses in the History of Western Education, the History of Canadian Education, and in Comparative Education. To assist in some supervision of student teachers or students in other phases of field experience. 4. 1978-79 salary range as follows: (1979-80 under negotiation) Assistant, $19,283 — $24,686; Associate, $24,691 — $32,022; Professor, $32,027 — ... 5. Letter of application, full curriculum vitae and names of three references to be sent to Dr. R.N. Anderson, Dean, Faculty of Education, The University of Lethbridge 4401 University Drive, Lethbridge, Alberta, Canada, T1K 3M4. 6. July 1, 1979: Effective date of appointment. 7. Closing date for applications: March 15, 1979.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. **Department of Education.** Assistant or Associate Professor — Division of Vocational Education. Qualifications: Master's degree; teaching experience in vocational education or industrial arts; experience in and / or familiarity with Canadian vocational education; interest in working with non-traditional students and the delivery of courses using both traditional and non-traditional methods. Nature of duties: 1. To teach in the undergraduate degree and diploma program. 2. To teach in the industrial arts diploma program. To assist in further development of the practical arts program. 3. To provide field service for the province's vocational and practical arts systems. 4. To counsel prospective and enrolled students. Salary: Commensurate with education and experience. Apply to: Professor Donald B. Camp, Director, Division of Vocational Education, Faculty of Education, Memorial University of Newfoundland, St. John's, Newfoundland A1B 3X8 Canada. Sent vitae and three letters of reference. Effective date of Appointment: May 1, 1979 or as soon as possible. Closing date for applications: When position filled.

ATLANTIC INSTITUTE OF EDUCATION. **Education.** 1. Research Associate (Assistant Professor). 2. Expertise in curriculum and instruction at the elementary school level. Demonstrated teaching excellence. Doctoral degree preferred. 3. To develop and conduct professional development programs for practicing elementary teachers. 4. Negotiable. 5. Letter of application. Full curriculum vitae and names of three references to be sent to: Andrew S. Hughes, Ph.D., Assistant Director, Atlantic Institute of Education, 5244 South Street, Halifax, Nova Scotia, B3F 1A4. 6. August 1, 1979. 7. March 1, 1979.

SIMON FRASER UNIVERSITY. **Faculty of Education.** Educational Administration. 1. Assistant or Associate Professor. 2. Doctorate in Educational Administration with emphasis in Politics / Finance of Education and Policy-making at all levels of the educational system. Strong Political Science orientation prefered, public school experience an asset. Active research / publications programme and commitment to excellent teaching. Interest in teacher preparation and school administration. 3. Teaching at graduate and undergraduate levels, graduate student supervision, programme development, research and publications. 4. Commensurate with qualifications and experience. 5. Send application, current curriculum vitae and names of three referees to Doctor G. Ivany, Dean of Education, Simon Fraser University, Burnaby, B.C. V5A 1S6. 6. September 1, 1979. Subject to final budget approval. 7. February 28, 1979.

SIMON FRASER UNIVERSITY. **Faculty of Education.** Counselling. 1. Assistant or Associate Professor. 2. Doctorate in Counselling Psychology with expertise in Counselling Methods and Field Supervision, in addition, the candidate should have some counselling experience in schools or agencies. 3. Major responsibilities in the areas of clinical supervision and Lifestyle Counselling. Teaching at undergraduate and graduate levels in Vocational Guidance and Vocational Assessment. It is expected that the candidate would develop a strong research programme. 4. Commensurate with qualifications and experience. 5. Send application, current curriculum vitae and names of three referees to Doctor G. Ivany, Dean of Education, Simon Fraser University, Burnaby, B.C. V5A 1S6. 6. September 1, 1979. Subject to final budget approval. 7. February 28, 1979.

SIMON FRASER UNIVERSITY. **Faculty of Education.** Art Education 1. Assistant Professor. 2. Advanced academic preparation in Art, Art Education and / or the Psychology of Creativity or equivalent. Experience in public school teaching involving extensive knowledge of current practice. Active interests in curriculum development and / or research on instruction applied to visual arts. 3. Teaching at graduate and undergraduate levels. Programme development, research and publications. 4. Commensurate with qualifications and experience. 5. Send application, current curriculum vitae and names of three referees to Doctor G. Ivany, Dean of Education, Simon Fraser University, Burnaby, B.C. V5A 1S6. 6. September 1, 1979. Subject to final budget approval. 7. February 28, 1979.

SIMON FRASER UNIVERSITY. **Faculty of Education.** Secondary Language Arts. 1. Assistant Professor. 2. Doctorate preferred with school experience. 3. Teaching at graduate and undergraduate levels. Active interests in research and development. Supervision of graduate studies. 4. Commensurate with qualifications and experience. 5. Send application, current curriculum vitae and names of three referees to Doctor G. Ivany, Dean of Education, Simon Fraser University, Burnaby, B.C. V5A 1S6. Subject to final budget approval. 7. February 28, 1979.

CONCORDIA UNIVERSITY. **Department of Education.** The Department of Education at Concordia University has openings for sessional lecturers for graduate and undergraduate courses in the Special Summer Session (July 3 — August 10). Teaching interests should be in the following areas: Nature and Function of Teaching, sociology of Education, Teaching of the Slow Learner, Education of the Culturally Disadvantaged Child, Research and Current Educational Problems, Graphic Communications, Management of Learning Resources, Theory of the Moving Image, Educational Simulation and Gaming, Curriculum Development, Foundations of Educational Technology, Instructional Systems Analysis. Applications with curriculum vitae and the names of three referees should be addressed to: Dr. H. Entwistle, Director, Summer Session in Education, Department of Education, Concordia University, 1455, boulevard de Maisonneuve ouest, Montréal, P.Q. H3G 1M8. Application deadline: March 15, 1979.

UNIVERSITY OF SASKATCHEWAN. **College of Education.** The College of Education invites applications for a full time position in Language Arts Education in the Department of Curriculum Studies. Qualifications: Doctorate or near completion of doctoral program; successful teaching experience in the Elementary School, preferably at the primary level. (Gr. 1 — 3.) Candidate should also have training and experience in Children's Literature. Responsibilities: 1) Teach undergraduate and graduate courses in the Language Arts; teach specific courses in Children's Literature; supervise student teachers; and participate actively in in-service workshops within the province. 2) Advise graduate students in the Language Arts. Rank and Salary: Assistant Professor. Commensurate with experience and qualifications. Employment Date: July 1, 1979, subject to budgetary approval. Deadline: March 1, 1979, or when position is filled. Apply to: Dr. J.L. Gajadharsingh, Head, Department of Curriculum Studies, College of Education, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

UNIVERSITY OF SASKATCHEWAN. **College of Education.** The College of Education invites applications for a full time position in French Education in the Department of Curriculum Studies. Qualifications: Doctorate or near completion of doctoral program; background and training in the French language; experience and / or training in "clinical supervision"; successful teaching in the elementary or Junior High School level. Responsibilities: 1) The successful candidate will be expected to supervise and coordinate activities in the internship program; teach introductory and advanced methods courses in French Education; supervise student teachers; and conduct in-service workshops. 2) Advise graduate students. Rank and Salary: Assistant Professor. Commensurate with experience and qualifications. Employment Date: July 1, 1979, subject to budgetary approval. Deadline: March 1, 1979, or when position is filled. Apply to: Dr. J.L. Gajadharsingh, Head, Department of Curriculum Studies, College of Education, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

UNIVERSITY OF SASKATCHEWAN. **Department of Educational Psychology** Position: Assistant Professor: Qualifications: Doctorate or doctorate near completion with considerable elementary or secondary school experience. A major in tests and measurement and research design required. Nature of Duties: Teaching undergraduate and graduate classes and involvement in supervision of student teachers and interns. Salary: Salary according to qualifications and experience. Applications: Send full curriculum vitae and names of three referees to Herbert Peters, Head, Department of Educational Psychology, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0. Effective Date: July 1, 1979, subject to budgetary approval. Closing Date: March 15, 1979, or when position is filled.

UNIVERSITY OF SASKATCHEWAN. **Department of Educational Foundations.** Permanent position. Assistant professor in Educational Foundations. Current departmental needs focus on sociology of education and general foundations of education. However, all applications are welcome. Qualifications: Doctorate complete or near completion. Teaching certificate and teaching experience in elementary or secondary school desirable. Nature of Duties: To teach interdisciplinary

and / or specific courses at the undergraduate and graduate levels. Supervision of student teachers and graduate students; research. Salary: Negotiable, depending on qualifications and experience (1978-79 salary range: $18,415—$23,365). Applications: Ormond McKague, Head, Department of Educational Foundations, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0. Effective Date: July 1, 1979, subject to budgetary approval. Closing Date: March 15, 1979 or when position is filled.

UNIVERSITY OF SASKATCHEWAN. **College of Education.** The College of Education invites applications for a full time position in General Curriculum in the Department of Curriculum Studies. Qualifications: Doctorate or near completion of doctoral program; background and training in Curriculum Theory and Curriculum Development, in Program Evaluation and Research Design and experience in the supervision of student teaching. Responsibilities: 1) Teaching undergraduate and graduate courses in Curriculum Theory and Development; supervise student teachers and participate actively in curriculum development and program evaluation within the province. 2) Advise graduate students. Rank and Salary: Assistant Professor. Commensurate with experience and qualifications. Employment Date: July 1, 1979, subject to budgetary approval. Deadline: March 1, 1979, or when position is filled. Apply to: Dr. J. L. Gajadharsingh, Head, Department of Curriculum Studies, College of Education, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

UNIVERSITY OF SASKATCHEWAN. **College of Education.** The College of Education invites applications for a full time position in Reading Education in the Department of Curriculum Studies. Qualifications: Earned doctorate with concentration in primary and intermediate reading; clinical training would be helpful; course work in language and / or linguistics would be an asset; a minimum of three years of public school experience, some university-level teaching experience would be preferred. Pertinent Data: The University of Saskatchewan is located in an urban area of 160,000 people that affords one a host of cultural and educational opportunities on campus and in the city and its school systems. Reading and the adults, reading and the native population, and reading in rural areas are developing needs requiring leadership of university personnel Responsibilities: 1) Teach introductory reading course; teach advanced courses at primary and intermediate levels; supervise student teachers; workshops and in-service courses. 2) Advise graduate majors in reading; encourage and foster student research. 3) Accept a role in curriculum development within the Reading division of the Department and within the province. Rank and Salary: Assistant Professor, salary commensurate with qualifications. Employment Date: July 1, 1979, subject to budgetary approval. Deadline: March 1, 1979, or when position is filled. Apply to: Dr. J. L. Gajadharsingh, Head, Department of Curriculum Studies, College of Education, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

UNIVERSITY OF BRITISH COLUMBIA. **Department of Adult Education.** The Department of Adult Education, Faculty of Education, The University of British Columbia, Vancouver, B.C., is looking for a faculty member at the assistant professor rank. The department offers M.Ed., M.A. and Ed.D. degrees and a diploma program in adult education and currently has approximately 100 students in these programs, and eight full-time faculty. Applicants for the position, which would become effective July 1 or September 1, 1979, should have a doctorate in adult education, competence in quantitative methods of inquiry, a satisfactory publication record and an interest in pursuing a clear line of research. Experience in university teaching is desirable but not required. Duties will include: teaching courses in adult education, counselling student research, pursuing one's own line of research, and rendering community service to the field. The salary will be competitive. Written applications accompanied by curriculum vitae and names and addresses of three referees should be sent to: Chairman, Search Committee, Adult Education Department, University of British Columbia, 5760 Toronto Road, Vancouver, B.C., Canada, V6T 1L2. Tel. Gordon Selman (604) 228-2380. Applications will be accepted until April 1, 1979, or until the position is filled.

UNIVERSITY OF GUELPH. **Department of Family Studies.** 1. Assistant Professor. 2. Doctoral degree in early childhood education, child studies or related field. 3. Undergraduate and graduate teaching and research in early childhood education and child development. Additional interests in one or more of play, exceptional children, child and family services will be an advantage. Candidates should have an interest in working in a multidisciplinary environment and must have strong research interests. 4. Salary dependent upon qualifications and experience. 5. Send full curriculum vitae and names of three referees to Dr. R. M. Barham, Chairman, Department of Family Studies, University of Guelph, Guelph, Ontario, N1G 2W1. 6. Appointment effective July 1, 1979 and is subject to final budgetary approval. 7. Position open until filled.

UNIVERSITY OF GUELPH. **Department of Family Studies.** 1. Lecturer. 2. M.Sc. or equivalent in early childhood education, child studies or related field. 3. Parttime (two-thirds) appointment to teach undergraduate practicum and theory course in early childhood education. Active research interests in curriculum development or program evaluation will be an advantage. Duties include those of a head teacher in charge of a half-day nursery school program. 4. Salary is competitive. 5. Send full curriculum vitae and names of three referees to Dr. R. M. Barham, Chairman, Department of Family Studies, University of Guelph, Guelph, Ontario. N1G 2W1. 6. Appointment effective August 1, 1979 and is subject to final budgetary approval. 7. Position open until filled.

ENGINEERING

ROYAL ROADS MILITARY COLLEGE. **Department of General Engineering.** Full-time tenure track faculty position in Department of General Engineering. PhD preferred. Lecturer or Assistant Professor with rank and salary dependent upon academic qualifications and experience. Undergraduate teaching and research in marine science. Send resume with names of three references to Dr. E. S. Graham, Principal, Royal Roads Military College, FMO, Victoria, B.C. V0S 1B0. Position open to both men and women.

UNIVERSITY OF NEW BRUNSWICK. **Department of Electrical Engineering.** The Department of Electrical Engineering at the University of New Brunswick requires an Assistant Professor or an Associate Professor with a background in small computers and digital systems. The successful candidate will be expected to teach undergraduate and graduate courses in the above areas. The appointee would be expected to supervise graduate students and should be willing to engage in grant and contract research, which need not be in the areas specified above. An appointment would commence as early as possible after June 30, 1979. Letters of application together with curriculum vitae, the names and addresses of three referees, and a statement of research interests should be sent to: Dr. E. F. Hill, Chairman, Electrical Engineering Department, University of New Brunswick, P.O. Box 4400, Fredericton, N.B., Canada, E3B 5A3.

McMASTER UNIVERSITY. **Department of Electrical Engineering.** Three positions are open at the level of Assistant Professor of Electrical Engineering, two of them tenurable and one contractually limited. Candidates must have a strong commitment to teaching undergraduates, outstanding research potential or record, and a willingness to participate in ongoing projects. Two of the positions require demonstrated proficiency in (digital) hardware or software aspects of computer engineering. One position requires a strong background in numerical methods and computer-aided design. PhD and refereed publications are essential. Address resumes and the names and addresses of three referees to Dr. J. W. Bandler, Chairman, Department of Electrical Engineering, McMaster University, Hamilton, Canada, L8S 4L7. Starting date July 1, 1979.

UNIVERSITY OF BRITISH COLUMBIA. **Civil Engineering Department.** 1. All positions available at Assistant Professor, tenure track. (Other ranks may be considered for exceptional qualifications). 2. All positions require PhD with experience in design and/or experimentation desirable. 3. a) Highway Materials Design: Teach materials and pavement design courses, develop asphaltic concrete design lab, conduct research on aggregates. b) Steel Design: Teach steel design courses and develop design oriented applied research. c) Coastal/Hydraulic Design: Teach and conduct research in coastal engineering and hydraulics (harbours, estuaries and rivers). 4. Commensurate with qualifications. 5. Send resume and names of three references to Dr. R. G. Campanella, Head, Civil Engineering Department, University of British Columbia, Vancouver, B.C. V6T 1W5. 6. All to start 1 July 1979. 7. When positions filled.

UNIVERSITY OF OTTAWA. **Department of Civil Engineering.** Applications are invited for positions at junior and intermediate levels in the Department of Civil Engineering with specialization in Geotechnical Engineering. Responsibilities: To teach undergraduate and graduate courses and to conduct research in an appropriate geotechnical speciality. Qualifications: PhD or equivalent. Degree in Civil Engineering or equivalent Civil Engineering experience. Bilingualism an asset. Research interests in a geotechnical speciality (examples: Foundations, Soil Dynamics, Porous Media Flow, Slope Stability, Geotechnical Materials). The Department also invites applications for a Visiting Professorship in the area of Geotechnical Engineering. Submit curriculum vitae to: Chairman, Department of Civil Engineering, University of Ottawa, Ottawa, Ontario, K1N 9B4.

UNIVERSITY OF BRITISH COLUMBIA. **Department of Metallurgical Engineering.** The Department of Metallurgy, U.B.C., expects to have a number of openings for the year 1979/80 for which inquiries are invited. Persons with backgrounds in Metallurgy, Mechanical Engineering or Chemistry could be suitable. 1. Visiting Professor to be responsible for teaching courses in extraction metallurgy at senior level. 2. Visiting Professor to teach introductory course in materials science as well as senior level physical metallurgy. 3. Research Associate to participate in ongoing program in coal research. 4. Post-Doctoral Fellows to work in various areas including high temperature metallurgy, ceramics, mechanical properties. Please send applications, including curriculum vitae and names of referees to E. Teghtsoonian, Head, Department of Metallurgical Engineering, The University of British Columbia, Vancouver, B.C. V6T 1W5.

McGILL UNIVERSITY. **Department of Electrical Engineering.** The Department of Electrical Engineering is seeking additional staff in the area of Computational Field Analysis, at the Assistant or Associate Professor levels. Experience with finite element methods or projective techniques is essential; a good knowledge of at least one branch of Electrical Engineering Technology, and some knowledge of computer graphics are desirable. Bilingualism will be considered a definite asset. Inquiries and applications with recent curriculum vitae and names of three references should be sent to Dr. P. R. Bélanger, Chairman, Department of Electrical Engineering, McGill University, 3480 University Street, Montréal, Québec, H3A 2A7.

QUEEN'S UNIVERSITY. **Department of Electrical Engineering.** Applications are invited for an Assistant or Associate Professorship in computers and logic design, or electronics. Background in teaching and research desirable. Industrial experience and Professional Engineer status advantageous. Basic duties will include undergraduate and graduate teaching, research compatible with the departmental program, and participation with other academic staff in the academic and administrative affairs of the department. Salary dependent upon qualifications. Initial apointment is for a term of 3 years. Submit detailed curriculum vitae, with letter and names of three referees, to be received no later than March 15, 1979, referring to file E-23, to Ph. H. Wittke, Head, Department of Electrical Engineering, Queen's University, Kingston, Ontario, K7L 3N6.

CARLETON UNIVERSITY. **Department of Mechanical and Aeronautical Engineering.** An opening exists for the appointment of an Assistant or Associate Professor in the Department of Mechanical and Aeronautical Engineering. The successful applicant will have an interest in applied mechanics and design and will be required to teach at both undergraduate and graduate levels and participate in the research activities of the department.. Applications with C.V. and names of three referees should be sent to: Dr. H.I.H. Saravanamuttoo, Chairman, Dept. of Mechanical and Aeronautical Engineering, Carleton University, Ottawa, Ontario, K1S 5B6. The initial appointment will be for a two year term, with the possibility of extension.

UNIVERSITY OF WATERLOO. **Department of Electrical Engineering.** Applications are being accepted for the position of Assistant Professor in one of the following areas: 1) control theory, 2) digital hardware and computers, 3) circuit theory and 4) microwaves and antennas. Applicants must hold a doctorate and some industrial experience would be considered an asset. The position will involve undergraduate and graduate teaching and graduate student supervision. The successful applicant will be expected to pursue an active program of research compatible with departmental interests. The position will be open until filled, but an appointment for September 1979 is anticipated. The salary will be commensurate with experience and qualifications. A detailed curriculum vitae, a statement of research and teaching interests and the names of three referees should be sent to: Chairman, Department of Electrical Engineering, University of Waterloo, Waterloo, Ontario, N2L 3G1, Canada. Subject to the availability of funds. First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

UNIVERSITY OF BRITISH COLUMBIA. **Department of Civil Engineering.** 1. Assistant or Associate Professor in Environmental Engineering; tenure track. 2. Ph.D. required with design or experimental experience being very desirable. 3. Teach undergraduate and graduate courses in water quality, solid waste management, and environmental impact assessment; conduct research in appropriate areas of environmental engineering. 4. Commensurate with qualifications. 5. Send resume and names of three references to Dr. R. G. Campanella, Head, Civil Engineering Department, University of British Columbia, Vancouver, B.C. V6T 1W5. 6. July 1, 1979. 7. Until position filled.

ENGLISH

DALHOUSIE UNIVERSITY. **Department of English.** Applications are invited for one or two appointments (subject to budgetary approval) beginning July 1, 1979 at the level of assistant professor or associate professor. Preference will be given to applicants in the following fields: Canadian literature; Renaissance non-dramatic literature; Victorian poetry. Applications should be made to: Professor Rowland Smith, Chairman, Department of English, Dalhousie University, Halifax, Nova Scotia, B3H 3J5.

MOUNT SAINT VINCENT UNIVERSITY. **Department of English.** Applications are invited for a specialist in freshman composition of functional rhetoric. Ph.D. desirable but not essential. Candidates should indicate particular strengths in the various fields of literature. Salary negotiable on basis of experience and qualifications. The appointment, subject to budgetary constraints, would be effective July 1, 1979. Curriculum vitae and references should be sent to Sr. A. M. Westwater, Chairman, Department of English, Mount Saint Vincent University, Halifax, Nova Scotia, B3M 2J6. The closing date for receipt of applications is March 31, 1979.

CONCORDIA UNIVERSITY. **Department of English.** The Department of English, Concordia University, seeks distinguished visiting faculty for its Summer Institute 1979. Ph.D. and publications required. The following courses will be offered: SGW Campus: Shakespeare (6 credits, cross-listed on

graduate courses and advanced seminar) Modern (Two 3-credit graduate courses on an author or topic) Genre (3 credits each in poetry and short fiction). LOY Campus: Modern Fiction (6 credits). Salary for six weeks, July 5 to August 15; $2500 for graduate courses, $2290 for undergraduate. Housing and travel allowances provided. Applications as soon as possible to Dr. R. K. Martin, Director, Summer Institute, Concordia University, 7141 Sherbrooke Street West, Montreal, Quebec H4B 1R6.

UNIVERSITY OF CALGARY. **Department of English.** Vacancies for 1979-1980 (subject to funding). Areas: Specialization in any area, but with versatility to teach a variety of courses at junior and senior levels. Ranks: Open. Qualifications: Ph.D. or equivalent in appropriate field. Teaching experience and publications desirable. Salary: Dependent on qualifications and experience. Current scales: (subject to revision 1/7/79) Assistant Professor $18,868 — $24,678. Associate Professor $23,223 - $31,969 Full Professor $30,805. Applications, with curriculum vitae and names of three referees to: Dr. H. Dahlie, Head, Department of English, The University of Calgary, Calgary, Alberta, Canada T2N 1N4. Closing date for Applications: When position filled. NOTE: Because of Canadian immigration requirements, appointees are likely to be Canadian citizens or Landed Immigrants in Canada.

UNIVERSITY OF LETHBRIDGE. **Department of English.** 1. Assistant Professor. 2. A Ph.D. degree with specialization in Renaissance Literature. Preference will be given to candidates with some teaching experience and scholarly publications. 3. To teach undergraduate courses in Renaissance Literature, Introduction to Literature, and other English courses appropriate to the individual's experience. 4. Salary Scale: ('78-'79) Assistant Professor — 19,283 - 24,686. 5. Applications, including a curriculum vitae, transcripts and three letters of reference, should be sent to: Dr. A. F. Cassis, Chairman, Department of English, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 3M4. 6. Term appointment up to one year, beginning 1 July 1979. 7. Deadline: 16 March 1979.

FAMILY STUDIES

UNIVERSITY OF GUELPH. **Department of Family Studies.** 1. Rank open. 2. Ph.D. or equivalent in sociology, psychology or related field with university teaching experience preferred. 3. Undergraduate and graduate teaching and research in family and group dynamics and family counselling. Additional interests in one or more of human development, human sexuality, adolescence, social gerontology will be an advantage. Candidates should have an interest in working in a multidisciplinary environment. 4. Salary open and competitive. 5. Send full curriculum vitae and names of three referees to Dr. R. M. Barham, Chairman, Department of Family Studies, University of Guelph, Guelph, Ontario, N1G 2W1. 6. Appointment effective July 1, 1979 and is subject to final budgetary approval. 7. Position open until filled.

FINANCE

UNIVERSITY OF SASKATCHEWAN. **College of Commerce.** New Faculty Positions in the College of Commerce, University of Saskatchewan Saskatoon, Saskatchewan. Positions Available: Applications are invited for full-time faculty positions in Finance. Effective Date of Appointment: July 1, 1979. Responsibilities: (1) Teaching at the Undergraduate and graduate levels. (2) Research leading to publication in academic journals. Qualifications Required: Candidates must hold a Ph.D. degree or be at the completion stage of the degree preferably with specialization in Management of Financial Institutions, Corporate Finance and Capital Markets. Minors in General Management, Computer and Quantitative Analysis are preferable. Serious consideration will be given to candidates with strong academic teaching and research record.Salary: Will be competitive and based upon academic qualifications, including prior teaching experience, business experience, and research and publications record.Basic Information About Us: (1) Saskatoon has a population of 160,000 with excellent schools and other public facilities. (2) The University of Saskatchewan has a student population of over 10,000. (3) The College of Commerce presently has a full-time equivalent faculty of 43 and a student population in excess of 1,150. Further Information: Interested candidates should send resumes to: Dean P. Michael Maher, College of Commerce, University of Saskatchewan, Saskatoon, Canada, S7N 0W0.

CONCORDIA UNIVERSITY. Department of Finance. Applications are invited for a full-time position in The Department of Finance. Proficiency in teaching and strong research orientation desired. All fields and ranks open for consideration, salary competitive. Ph.D. completed or near completion required as a basis for consideration. Academic and / or business experience is desirable. Montreal offers a unique and stimulating environment for academic advancement. Apply with full documentation to Associate Professor, E. J. Douglas, Chairman, Department of Finance, Concordia University, 1455 de Maisonneuve Blvd. W., Montreal, Quebec. H3G 1M8, Canada.

GEOGRAPHY

CONCORDIA UNIVERSITY. **Department of Geography.** 1. Lecturer or Assistant Professor to replace a faculty member on leave. 2. Ph.D. required for appointment as an Assistant Professor. 3. To teach Introductory Physical Geography and Biogeography at the second year level. 4. Maximum salary $20,800. 5. Send Curriculum Vitae and the names of three referees to Dr. David Frost, Chairman, Department of Geography, Concordia University, 1455 de Maisonneuve Blvd. West, Montreal, Quebec, H3G 1M8. Closing Date: February 28, 1979.

MCMASTER UNIVERSITY. **Department of Geography.** Applications are invited for two two-year contractual appointments at the Assistant Professor level commencing July 1, 1979. Salary dependent on qualifications; minimum for Assistant Professor is $17,000 in 1978-79. Applicants will be considered with strong research and teaching concerns in (i) economic and urban geography, or (ii) historical geography, or (iii) physical geography. Preference will be given to applicants who are eligible for employment in Canada at the time of application. Send vitae and names of three referees to: Dr. D. C. Ford, Chairman, Department of Geography, McMaster University, Hamilton, Ontario, L8S 4K1.

UNIVERSITY OF TORONTO. **Department of Geography.** Applications are invited for a contractually-limited position at the Assistant Professor level for which a Ph.D. is required. Appointment of a Lecturer will be considered if the applicant has Ph.D. pending Applicants should be able to teach basic climatology. An interest in problems of environmental assessment and the applied aspects of climatology is highly desirable. This position is initially for one or two years with one renewal possible, subject to budget approval. Applications, including curriculum vitae and names of three referees, to: Professor John N. H. Britton, Chairman, Department of Geography, University of Toronto, Toronto, Canada, M5S 1A1 before March 1st, 1979.

UNIVERSITY OF TORONTO. **Department of Geography.** Physical Geographer — Applied Environmentalist — Applications are invited for a tenure stream position in the Department of Geography, Erindale College, University of Toronto, beginning July 1, 1979. The appointment will be at the rank of Assistant Professor for which a Ph.D. is required. The successful applicant should have an interest in applied environmental research and, following this orientation, be able to teach courses in hydrology, water quality, and either environmental systems or fluvial geomorphology. Applications, including curriculum vitae and names of three referees to: Professor John N. H. Britton, Chairman, Department of Geography, University of Toronto, Toronto, Canada M5S 1A1 before March 23, 1979.

UNIVERSITY OF VICTORIA. **Department of Geography.** Assistant Professor 1 July, 1979. Salary range $18,000 — $23,000. Ph.D. required. Position: Cartography and Allied Techniques. Ability to teach introductory and advanced cartography required and ability to teach introductory geography courses desirable. Allied techniques could include computer mapping, photogrammetry, remote sensing, surveying and map reproduction. Submit curriculum vitae and the names of three referees by March 1, 1979 to: Dr. C. N. Forward, Chairman, Department of Geography, University of Victoria, B.C. Canada V8W 2Y2.

YORK UNIVERSITY. **Department of Geography.** Assistant Professor. Contractually limited appointment for one or two years beginning Fall 1979. Ph.D. required. Physical geographer with primary interest in climatology or bioclimatology. Send vitae and names of three referees. Apply: James R. Gibson, Chairman, Department of Geography, York University, 4700 Keele Street, Downsview, Ontario, Canada M3J 1P3.

GEOLOGY

UNIVERSITY OF WINDSOR. **Department of Geology.** Postdoctoral Research Position. The Department of Geology, University of Windsor, invites applications for a one-year appointment commencing as soon as possible. Qualifications: a Ph.D. in sedimentology with a basic knowledge of glacial geology, or a Ph.D. in glacial geology with a basic knowledge of sedimentology. Stipend $925 per month. Send curriculum vitae and names of three referees to: Dr. R. K. Jull, Head, Department of Geology, University of Windsor, Windsor, Ontario, Canada, N9B 3P4.

MCMASTER UNIVERSITY. **Department of Geology.** Research in trace element geochemistry to petrological problems. Experience in AAS desirable. National Research Council of Canada stipend rates. Enquire to Denis M. Shaw, indicating when available, McMaster University, Department of Geology, 1280 Main Street West, Hamilton, Ontario, Canada L8S 4M1.

HEALTH STUDIES

UNIVERSITY OF WATERLOO. **Department of Health Studies - Biomedical Sciences.** Applications are being accepted for an Assistant or Associate Professor appointment, contingent upon availability of funds. Ph.D. in biomedical sciences or M.D. Duties include teaching courses in both undergraduate and graduate programmes. Ability to teach in one or more of the following areas is preferred: community health, occupational health; and psychosomatics. Salary commensurate with qualifications and experience. Starting September 1, 1979 or sooner. Apply to: Dr. J. A. Best, Chairman, Department of Health Studies, University of Waterloo, Waterloo, Ontario, Canada. N2L 3G1. First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

UNIVERSITY OF WATERLOO. **Department of Health Studies - Behaviour Modification.** Applications are being accepted for an Assistant or Associate Professor appointment, contingent upon availability of funds. Ph.D. or equivalent and background in behaviour modification. Duties include teaching behaviour modification courses in both undergraduate and graduate programmes. Salary commensurate with qualifications and experience. Starting September 1, 1979 or sooner. Apply to: Dr. J. A. Best, Chairman, Department of Health Studies, University of Waterloo, Waterloo, Ontario, Canada. N2L 3G1. First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

HISTORY

SIMON FRASER UNIVERSITY. **Department of History.** The Department of History at Simon Fraser University has been authorized to advertise the following position. This position is subject to budgetary constraints. Preference is given to applicants who are eligible for employment in Canada at the time of application. A Visiting Instructor or Assistant Professor for summer semester and session to teach two or three upper level Canadian History courses. Ph.D. preferred. Salary - normally 40% of annual base salary at rank and return economy airfare. Send letter of application and c.v. to Dr. D. Cole, Chairman, Department of History, Simon Fraser University, Burnaby, B.C. V5A 1S6. Closing date is 15 March 1979.

UNIVERSITY OF TORONTO, SCARBOROUGH COLLEGE. **Division of Humanities.** History. 1. Assistant Professor (contractually limited term appointment, up to two years with possible extension; subject to financing). 2. Ph.D. required; teaching experience preferred. 3. Early modern European History; preferred fields are Renaissance Europe, 18th/19th Century France, Tudor and Stuart England. Candidates equipped to teach in more than one area, and with strong interests outside their major research area, will be given special consideration. 4. Salary in the lower Assistant Professor range. 5. Send curriculum vitae, recommendations and publications to Professor Paul W. Gooch, Chairman, Division of Humanities, Scarborough College, University of Toronto, West Hill, Ontario, M1C 1A4. 6. 1 July 1979. 7. 1 March 1979.

UNIVERSITY OF TORONTO, ERINDALE COLLEGE. **Department of History.** Erindale College, the Mississauga campus of the University of Toronto, wishes to make an appointment in Canadian History. All ranks and fields will be considered, with preference given to established scholars with teaching experience. Deadline is date of appointment. Enquiries and applications should be addressed to Professor Claire La Vigna, Erindale College, University of Toronto, Mississauga, Ontario, L5L 1C6.

UNIVERSITY OF VICTORIA. **Department of History.** The History Department, University of Victoria, has two eight month replacement vacancies from September 1, 1979, to April 30, 1980. Teaching requirements will be in two of the three following areas, depending on internal arrangements: 1. Canadian history, including introductory survey and upper level B.C. history. 2. American history. 3. Asian history, including introductory survey and upper level course on Modern Japan. An ability to teach in more than one of the three areas will be an additional asset. Applications including curriculum vitae and the names of three referees to Dr. J. Money, Chairman, Department of History, University of Victoria, P.O. Box 1700, Victoria, B.C. V8W 2Y2 by 2nd March, 1979.

ROYAL MILITARY COLLEGE OF CANADA. **Department of History.** 1. Associate of Full Professor. 2. Ph.D. whose area of specialization should be East Asia, though other areas will be considered. 3. Normal teaching load will include at least one course outside area of specialization. Successful applicant will be considered for appointment as head of Department. 4. Salary commensurate with qualifications and experience. 5. Dr. Edgar Denton, III, Department of History, Royal Military College of Canada, Kingston, Ontario, K7L 2W3. 6. 1 September 1979. 7. 15 March 1979.

UNIVERSITY OF WESTERN ONTARIO. **Department of History.** 1. Limited term appointment (2 years, beginning 1 July 1979) in Twentieth Century United States History at the rank of Lecturer or possibly Assistant Professor, subject to funds being available. 2. Ph.D or near and teaching experience desirable. 5. Curriculum vitae, graduate transcripts and three letters of reference to P. Neary, Chairman, Department of History, University of Western Ontario, London, Ontario, N6A 5C2. 6. 28 February 1979.

UNIVERSITY OF WESTERN ONTARIO. **Department of History.** 1. Limited-term appointment (2 years, beginning 1 July 1979) in Nineteenth Century United States History at the rank of Lecturer or possibly

Assistant Professor, subject to funds being available. 2. Ph.D. or near and teaching experience desirable. 5. Curriculum vitae, graduate transcripts and three letters of reference to P. Neary, Chairman, Department of History, University of Western Ontario, London, Ontario, N6A 5C2. 6. 28 February 1979.

UNIVERSITY OF VICTORIA. **Department of History.** The History Department, University of Victoria, invites applications for a regular full-time appointment in Canadian history at the Assistant Professor level with Ph.D. complete to teach in the areas of New France and British North America. Preference will be given to candidates with an interest in one or more of the following specializations: social history, quantitative methodology, comparative aspects of the British and French colonial experiences. Applications including curriculum vitae and names of three referees to Dr. J. Money, Chairman, Department of History, University of Victoria, B.C. V8W 2Y2, by March 2, 1979.

UNIVERSITY OF VICTORIA. **Department of History in Art.** The University of Victoria invites applications for a regular position at the rank of Assistant Professor in the Medieval and Modern fields. Applicants should be qualified to teach in both fields; preference within the fields would be for an emphasis on High Medieval (ie. Gothic) and on 19th century European painting. A doctorate is essential. Current minimum salary: $18,100. Effective date of appointment: July 1, 1979. Apply with curriculum vitae and the names of three referees to: Dr. Alan Gowans, Chairman, Department of History in Art, University of Victoria, P.O. Box 1700, Victoria, B.C., V8W 2Y2.

UNIVERSITY OF VERMONT. **History Department.** Assistant Professor or Instructor. To develop and teach courses on Canada, esp. Quebec, and Canadian-American relations; research on topics related to French-speaking Canada. Participation in Canadian Studies Program. Teaching of courses outside area of specialization, to be agreed upon, depending on candidate's academic background and qualifications. Women and members of minority groups encouraged to apply. Qualifications: Ph.D. or A.B.D. Fluent French. Demonstrated research interest in Quebec history. Must have broad secondary teaching field(s) (topical, methodological, or area) which would contribute to breadth of departmental offerings. Willingness to cooperate in strong, established interdisciplinary Canadian Studies Program. W. W. Schmokel, History Department., University of Vermont, Burlington, VT 05405. An affirmative action employer.

HOME ECONOMICS

MOUNT SAINT VINCENT UNIVERSITY. **Department of Home Economics.** Mount Saint Vincent University invites applications for a position in Home Economics Education. Ph.D. desirable although Masters will be considered. Teaching responsibilities include undergraduate classes in Home Economics Education, Communications in Home Economics, and the supervision of student teaching. Rank and salary will be based on qualifications and experience. Effective date of appointment is July 1, 1979. A curriculum vitae and the names of two referees should be forwarded to the Chairman, Department of Home Economics, Mount Saint Vincent University, Halifax, Nova Scotia, B3M 2J6.

UNIVERSITY OF ALBERTA. **Faculty of Home Economics.** (Division of Family Studies) Academic Rank: Assistant or Associate Professor. Nine month appointment to replace faculty member on leave. Degree: Ph.D. with some teaching and research interests. Supervision of graduate students. Child Development and general family studies. Current salaries: 1978-79 floors - Assistant - $18,530; Associate - $24,060. Deadline for applications - March 1st, 1979. Write to: Dr. Dianne Kieren, Chairperson, Division of Family Studies, Faculty of Home Economics, 801 General Services Building, University of Alberta, T6G 2M8. (The University of Alberta is an Equal Opportunities Employer.)

HUMAN DEVELOPMENT

UNIVERSITY OF TORONTO, ERINDALE COLLEGE. **Centre for Research in Human Development.** University of Toronto, 2-year Research Associate position in auditory development, beginning September, 1979. Ph.D. and relevant research experience. Send curriculum vitae and letters of reference to Dr. S. E. Trehub, Centre for Research in Human Development, Erindale College, University of Toronto, Mississauga, Ontario, Canada, L5L 1C6.

INSTITUTIONAL RESEARCH

UNIVERSITY OF CALGARY. **Institutional Research.** Applications are invited for the position of Academic Analyst. Duties include working with a small group of professional associates to provide support for institutional planning, policy formulation and decision-making through the provision of statistical data, information, reports and analyses. Applicants should have experience in university administration or teaching. Background in analysis using large data systems would be an asset. Salary is commensurate with qualifications and experience. Applications should be sent to: Dr. Bernard S. Sheehan, Director, Office of Institutional Research, The University of Calgary, Calgary, Canada T2N 1N4.

KINESIOLOGY

UNIVERSITY OF WATERLOO. **Department of Kinesiology - Social Psychology.** Applications are being accepted for the position of assistant, associate or full professor in Kinesiology - Social Psychology of Physical Activity, rank open depending upon qualifications and experience. Earned doctorate in social psychology or related discipline. Duties include teaching and supervise research in undergraduate and graduate programmes in area of specialization. Salary commensurate with rank. Those interested should send applications to Professor Norman J. Ashton, Chairman, Department of Kinesiology, University of Waterloo, Waterloo, Ontario N2L 3G1. Effective date of appointment is until position filled. First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

UNIVERSITY OF WATERLOO. **Department of Kinesiology - Sociology of Physical Activity.** Applications are being accepted for the position of assistant, associate or full professor in Kinesiology - Sociology of Physical Activity, rank open depending upon qualifications and experience. Earned doctorate in sociology or related discipline. Duties include teaching and supervise research in undergraduate and graduate programmes in area of specialization. Salary commensurate with rank. Those interested should send applications to Professor Norman J. Ashton, Chairman,. Department of Kinesiology, University of Waterloo, Waterloo, Ontario, N2L 3G1. Effective date of appointment is July or September 1, 1979. Subject to availability of funds. Closing date for receipt of applications is until position filled. First consideration will be given to those applicants who at the time of application are legally eligible for work in Canada for the period covered by this position.

SIMON FRASER UNIVERSITY. **Department of Kinesiology.** The Department of Kinesiology in cooperation with the Faculty of Education intends to offer new theory and laboratory courses in biomechanics, motor learning and exercise physiology for those who intend a career in teaching Physical Education. A joint position with the Faculty of Education at the Assistant professor level will be filled subject to the availability of funds in September 1979. Candidates should possess a PhD degree. They should have a developed research interest in biomechanics and a genuine desire to transmit a better fundamental understanding of human performance to potential teachers of Physical Education. Some experience of curriculum design is desirable. Appointment at the Assistant Professor level will be at a salary commensurate with experience. Practical experience in teaching team sports, individual sports or recreational activities will be advantageous. Application with the names of three referees should be made to Dr. E. W. Banister, Chairman, Department of Kinesiology, Simon Fraser University, Burnaby, British Columbia V5A 1S6. The final date for submission of application is March 5, 1979.

SIMON FRASER UNIVERSITY. **Department of Kinesiology.** Position related to Studies in Health Sciences. A position is available for a person to work in an interdisciplinary department of physicians, physiologists, engineers, biologists and biochemists. The department is interested in developing its courses in any of the areas of ergonomics human factors, industrial hygiene, community or occupational health. The appointee will be required to conduct research in one or more of these related areas. A Ph.D. or M.D. degree is an essential qualification. It is anticipated that the appointment will be made at the Assistant Professor level. Applications together with the names of three referees may be made to Dr. E. W. Banister, Chairman, Department of Kinesiology, Simon Fraser University, Burnaby, British Columbia, V5A 1S6. The final date for submission of application is March 5, 1979.

LANGUAGES

YORK UNIVERSITY. **Department of Languages, Literatures and Linguistics.** The Department of Languages, Literatures and Linguistics invites applications for a one-year appointment (with a possibility of renewal) in Hebrew. The position entails teaching Hebrew language from elementary to advanced levels. Candidates should be able to teach the history and development of the Hebrew language, should be familiar with the use of a language laboratory and should be able to participate in the training of teachers. Rank open: salary according to rank. Ph.D. preferred. Appointment subject to budget allocation. Deadline for applications February 28, 1979. Applications should be sent to: Wolfgang P. Ahrens, Chairman, Department of Languages, Literatures and Linguistics, York Univesrity, 4700 Keele Street, Downview, Ontario, M3J 1P3.

UNIVERSITY OF ALBERTA. **Department of Romance Languages.** Possibility of an appointment in French. Ph.D., teaching excellence and versatility essential. Effective date of appointment, July 1, 1979. Rank and salary in accordance with qualifications and experience. Applications are to be sent to Prof. J. A. Creore, Chairman, Department of Romance Languages, University of Alberta, Edmonton, Alberta, T6G 2E6, and will be accepted until the position is filled. The University of Alberta is an equal opportunity employer. (Position subject to budgetary approval.)

BRANDON UNIVERSITY. **Department of Classical and Modern Languages.** German. 1. Lecturer or Assistant Professor. 2. Doctorate in hand or near completion. Candidates who plan to pursue doctoral studies in the near future will be considered. 3. Undergraduate teaching at the Introductory, Intermediate and Advanced levels, involving language and literature. An evening, non-credit Conversational German course has been offered this year as well. 4. Salary schedule under negotiation. 1977-78 minima: Lecturer $14,550; Assistant Professor $17,600. 5. Send Curriculum Vitae, transcripts and names of three referees to: Prof. H. V. Vidal, Chairman, Department of Classical and Modern Languages, Brandon University, Brandon, Manitoba, R7A 6A9. 6. September 1, 1979. 7. March 15, or until an appointment is made.

UNIVERSITY OF TORONTO, SCARBOROUGH COLLEGE. **Division of Humanities. Italian.** 1. Tutor. 2. Native command of Italian, with experience in language teaching and primary interest in language instruction; a strong secondary interest in modern Italian literature (including theatre and film) would be an advantage; Ph.D. desirable. 3. Duties include language teaching at all levels, elementary to advanced; there is the possibility of an occasional course in a secondary specialty like theatre or film. 4. Salary dependent upon qualifications and experience. 5. Send curriculum vitae, recommendations and publications to Professor Paul W. Gooch, Chairman, Division of Humanities, Scarborough College, University of Toronto, West Hill, Ontario, M1C 1A4. 6. 1 July 1979. 7. 1 March 1979.

LAW

CARLETON UNIVERSITY. **Department of Law.** One Assistant Professor position required for a two year appointment, commencing in July, 1979, with the possibility of continuing appointment. Candidates should have completed studies in law at the masters level. Successful candidate will be required to teach law courses in the commercial law field. Appointment is subject to the availability of funds. Please submit curriculum vitaw and the names of three referees to D. W. Elliott, Chairman, Department of Law, Carleton University, Ottawa, Ontario, K1S 5B6. Closing date for receipt of applications is June 1, 1979.

UNIVERSITY OF SASKATCHEWAN. **College of Law.** The College of Law, University of Saskatchewan, invites applications for assistant professor positions, appointment to take effect July 1, 1979. A graduate degree in law, significant experience in practice or equivalent is required. Salary commensurate with qualifications and experience. Applications, accompanied by a detailed curriculum vitae and the names of three referees, should be addressed to Dean Donald H. Clark, College of Law, University of Saskatchewan, Saskatoon, Sask., S7N 0W0.

UNIVERSITY OF WESTERN ONTARIO. **Faculty of Law.** Applications are invited for assistant, associate and full professor positions in the Faculty of Law for appointments to commence July 1, 1979. Applications should be addressed to Dean Davis L. Johnston, Faculty of Law, the University of Western Ontario, London, Ontario, N6A 3K7, and should contain a detailed curriculum vitae together with the names of three referees. All openings subject to availability of funds.

UNIVERSITY OF CALGARY. **Faculty of Law.** Applications are invited for a position commencing July 1st, 1979. Duties will include teaching in the areas of Corporation, Taxation and Business Planning. Coordination of Business Planning Practicum. Qualifications should include: LL.M. Degree or equivalent qualifications. Three or more years of teaching experience in the Corporation / Taxation fields. Experience in practice for a similar period may be an acceptable substitute. Applicants should send vitae and the names of three references to Dean J. P. S. McLaren, Faculty of Law, Room 572, Biological Sciences Building, University of Calgary, 2920 - 24th Avenue, N.W., Calgary, Alberta, T2N 1N4.

MANAGEMENT

UNIVERSITY OF CALGARY. **Faculty of Management.** The University of Calgary, Faculty of Management, is seeking candidates for a senior position in International Business Studies. Rank and salary based on qualifications and experience. Starting July 1, 1979 or later. This position is subject to program funding. Applications should be addressed to: Dr. George S. Lane, Dean, Faculty of Management, The University of Calgary, Calgary, Alberta, T2N 1N4.

UNIVERSITY OF CALGARY. **Faculty of Management.** The University of Calgary, Faculty of Management, is seeking qualified candidates to fill positions in all areas including Accounting, Policy & Environment, Finance, Industrial Relations, Management, Management Science & Management Information Systems and Marketing, beginning July 1, 1979. Ph.D. or D.B.A. preferred. Rank and salary based on qualifications and

experience. Applications should be addressed to: Dr. George S. Lane, Dean, Faculty of Management, The University of Calgary, Calgary, Alberta, T2N 1N4.

MCGILL UNIVERSITY. **Faculty of Management:** Appointment in Management Policy beginning in summer of 1979. Superior teaching capacity and strong research potential required to fulfill needs at B.Com., MBA, and Ph.D. levels in the McGill Faculty of Management. Please address inquiries and applications to Professor Henry Mintzberg. Faculty of Management, McGill University, 1001 Sherbrooke St. West, Montreal, Quebec H3A 1G5.

UNIVERSITY OF GUELPH. **School of Hotel and Food Administration.** Assistant Professor for undergraduate teaching in management studies and food service administration. Qualifications required are a Master's degree or Ph.D. in an appropriate discipline and preferably both industry and academic experience. Salary negotiable. Applications should be directed to: Professor G. D. Bedell, Director, School of Hotel and Food Administration, University of Guelph, Guelph, Ontario, N1G 2W1. Appointment effective August 1, 1979. Applications accepted until position is filled. Position is subject to final budgetary approval.

UNIVERSITY OF REGINA. **Faculty of Administration.** General Management and some combination of marketing, finance, public administration, personnel and industrial relations. Rank and salary are open, depending on qualifications; salaries are fully competitive. Preference will be given for Ph.D./D.B.A. and appropriate managerial/organizational experience. Interested candidates should send c.v. and names of referees to Dean, Faculty of Administration, University of Regina, Regina, Sask., S4S 0A2. Effective date of appointment is July 1, 1979.

MATHEMATICS

UNIVERSITY OF GUELPH. **Department of Mathematics and Statistics.** Statistician, Biostatistician. Applications are invited from those interested in faculty positions in Statistics. Required are a Ph.D. in an appropriate field and documentation of skilful research and teaching ability. Experience in statistical consulting will be an asset. These positions are contractually limited to one year with possible extension to a second year and are subject to final budgetary approval. Duties start September 1979. A resumé and the names of three referees should be sent to A. McD. Mercer, Chairman, Departmentof Mathematics and Statistics, University of Guelph, Guelph, Ontario, N1G 2W1.

UNIVERSITY OF GUELPH. **Department of Mathematics and Statistics.** Mathematician. Applications are invited from those interested in faculty positions in Mathematics. Required are a Ph.D. in an appropriate field and documentation of skilful research and teaching ability. These positions are contractually limited to one year with possible extension to a second year and are subject to final budgetary approval. Duties start September 1979. A resumé and the names of three referees should be sent to A. McD. Mercer, Chairman, Department of Mathematics and Statistics, University of Guelph, Guelph, Ontario, N1G 2W1.

SIMON FRASER UNIVERSITY. **Department of Mathematics.** Applications are invited for the positions of two visiting assistant professorships, both positions commencing September 1, 1979. Applicants should have a Ph.D. or equivalent research experience in either numerical analysis or discrete mathematics. Duties will include teaching and research. The salary will be commensurate with experience. Appointments are dependent upon final budget approval. Applications should be received by February 28, 1979. Applicants should arrange for three letters of reference to be sent directly to: Chairman, Department of Mathematics, Simon Fraser University, Burnaby, B.C. V5A 1S6.

SIMON FRASER UNIVERSITY. **Department of Mathematics.** The Department of Mathematics invites applications for the positions of (i) assistant professor and (ii) visiting assistant professor, both positions commencing September 1, 1979. Applicants must have a Ph.D. or equivalent research experience in statistics. Duties will include teaching and research. The salary will be commensurate with experience. Appointment is dependent upon final budget approval. Applications should be received by January 15, 1979. Applicants should arrange for three letters of reference to be sent directly to: Chairman, Department of Mathematics, Simon Fraser University, Burnaby, B.C. V5A 1S6.

DALHOUSIE UNIVERSITY. **Mathematics Department.** Dalhousie University expects to appoint a Computer Scientist as of July 1, 1979. This appointment is for a tenure track position at the rank of Assistant Professor, and is subject to final budgetary approval. Responsibilities include research in Computer Science and teaching mainstream Computer Science courses within the environment of a Mathematics Department. Applicants should send a curriculum vitae, including the names of three references, to P. N. Stewart, Chairman, Mathematics Department, Dalhousie University, Halifax, N. S., B3H 3H8.

THE UNIVERSITY OF CALGARY. **Department of Mathematics and Statistics.** Applications are invited for sessional instructorships in Applied Mathematics, Pure Mathematics, or Statistics for the 1979-80 academic year. The appointee(s) will be expected to undertake both teaching and research and should have recently completed all requirements for a doctoral degree. Appointments are subject to the availability of funds, but it is likely that at least two such appointments will be made, and they could be renewable for a second year. Applicants should address their applications, with curriculum vitae, list of publications, and names of three referees to The Head, Department of Mathematics and Statistics, The University of Calgary, 2920 - 24th Avenue N.W., Calgary, Canada, T2N 1N4, to be received in Calgary by April 1st, 1979.

MEDICINE

UNIVERSITY OF ALBERTA. **Department of Medicine, Division of Gastroenterology.** The University of Alberta is seeking an academic gastroenterologist with career motivation and accomplishment in scientific research as well as experience in clinical gastroenterology and teaching of medical students, graduates, and fellowship trainees. Salary related to rank within the established salary schedule of the Faculty of Medicine. For information reply to R.H. Wensel, M.D., Director, Division of Gastroenterology, Department of Medicine, University of Alberta, Edmonton, Alberta, Canada, T6G 2G3.

UNIVERSITY OF TORONTO. **Faculty of Medicine.** 1. Playfair Neuroscience Unit. 2. Research Associate. Position will have a term of one to two years. 3. Applicants should have an M.D. and/or Ph.D. degree. 4. Work is in several areas including — a) Cellular and genetic mechanisms of pathological motor control. b) Effects of pharmacological agents including abused drugs on movement control. c) Short and long term effects of abused drugs on neuronal functions and structure. Successful applicants will work within a multidisciplinary research group which includes neuropharmacologists, neurophysiologists, neuromorphologists and clinical neurologists. 5. $13,000-$20,000. 6. Chairman, Neuroscience Search Committee. University of Toronto, Toronto Western Hospital, 399 Bathurst Street, Room 903, 9 North Pavilion, Toronto, M5T 2S8. A curriculum vitae and the names of 3 references should be included with applications. 7. April 1, 1979 and September 1, 1979. 8. March 1, 1979.

UNIVERSITY OF TORONTO. **Faculty of Medicine.** 1. Banting and Best Department of Medical Research. 2. Professor and Chairman. 3. Ph.D. and/or M.D. with internationally-recognized achievements in research. 4. To administer the department, and activities of the department — with particular emphasis on research endeavours. 5. Commensurate with qualifications and experience. 6. Dr. K.J. Dorrington, Chairman of Selection Committee and Associate Dean, Basic Sciences, Faculty of Medicine, Medical Sciences Building, University of Toronto, Toronto, Canada, M5S 1A8. 7. July 1, 1979. 8. March 1, 1979.

UNIVERSITY OF TORONTO. **Department of Family and Community Medicine.** 2) Academic Rank — Lecturer or Assistant Professor, depending on qualifications. 3) Ontario License to practice medicine C.C.F.P., interest in obstetrics important, experience in private practice preferred, teaching experience an asset. 4) Conduct of full range of family medicine, teaching responsibility at undergraduate and graduate levels of medical and other health trainees. Interest in research and committee activities. High percentage of female patients in present practice. 5) Commensurate with qualifications. 6) Dr. Rodger Hines, Co-ordinator St. George Health Centre, 174 St. George Street, Toronto, Ontario M5R 2M9. 7) 1st March, 1979. 8) 1st February, 1979.

QUEEN'S UNIVERSITY. **Department of Paediatrics, Beechgrove Regional Children's Centre.** A geographical full time faculty position is available at the level of Assistant/Associate Professor, depending upon qualifications and experience. Fellowship in the Royal College of Physicians (Canada) in Paediatrics or the equivalent is necessary. The academic position is associated with the teaching and research program of the Department, principally in the field of behavioural paediatrics. The clinical appointment is in the Early Intervention Service of Beechgrove Regional Children's Centre. Adequate training and clinical experience in behavioural paediatrics is necessary, and a demonstrated research interest in the field is desirable. Please forward application together with curriculum vitae and names of three referees to: Dr. R.W. Boston, Professor and Head, Department of Paediatrics, Queen's University, 20 Barrie Street, Kingston, Ontario, K7L 3N6.

UNIVERSITY OF TORONTO. **Department of Surgery** — Division of Urology — Toronto Western Hospital. University of Toronto, Faculty of Medicine. 2) Research Associate. 3) Ph.D. — with experience in Crystallography and crystal growth essential. 4) Research Studies in recurrent kidney stone disease. 5) Commensurate with experience and qualifications. 6) Dr. P.O. Crassweller, Suite 404, 25 Leonard Street, Toronto, Ontario M5T 2R2. 7) As soon as possible — no later than April 1. 8) February 15.

ALBERTA CHILDREN'S HOSPITAL. **Teratologist or Developmental Geneticist.** A position is available, at the Alberta Children's Hospital, Research Centre, starting July 1, 1979. The requirements are Ph.D., or M.D., degree plus necessary experience. Knowledge of cytogenetics and biostatistics would be helpful. The post will be held jointly with the University of Calgary, Faculty of Medicine. The ability to work collaboratively is essential. This will be a grant supported position, the initial appointment will be for 3 years which will be renewable if grant permits. Send letter of application and curriculum vitae to Dr. R.B. Dowry, Alberta Children's Hospital, 1820 Richmond Road, S.W., Calgary, Alberta, Canada T2T 5C7.

UNIVERSITY OF ALBERTA. **Division of Endocrinology and Metabolism.** Endocrinologist: Canadian Fellowship eligible Int. Med.; research interests in lipid, carbohydrate or hypertensive disorders. Full-time position with teaching and practice components. Contact: Dr. Peter M. Crockford, Director, Division of Endocrinology and Metabolism, Faculty of Medicine, University of Alberta, Edmonton, Alberta, Canada T6G 2G3.

MICROBIOLOGY

UNIVERSITY OF WESTERN ONTARIO. **Department of Microbiology and Immunology.** A Post-Doctoral position available for research in bacterial structure / function. A background in microbiology, biochemistry or biophysics is expected; the approach emphasizes electron microscopy but includes biochemical and other techniques of structural analysis. Some participation in teaching can be arranged. Salary at MRC rates (ca $12,000. p.a.). Contact Professor R.G.E. Murray, Department of Microbiology and Immunology, University of Western Ontario, London, Ontario. N6A 5C1. (519-679-3751). Position becomes available August 1, 1979.

UNIVERSITY OF TORONTO, SCARBOROUGH COLLEGE. Division of Life Sciences. **Microbiology.** Applications are invited for an assistant professorship in the tenure-stream. The applicant should have a Ph.D. and post-doctoral research experience in microbiology. No preference exists for any particular research specialty within the field. Demonstrated ability to teach effectively across the subject area would be an important asset. Principal duties would be undergraduate teaching, participation in graduate instruction and the development of an active research programme. The current salary floor is $16,500. The appointment is open from July 1st, 1979 and the applicant must be available to commence duties not later than September 4th, 1979. Curriculum vitae and the names of three referees should be sent to Dr. G.R. Williams, Chairman, Division of Life Sciences, Scarborough College, University of Toronto, West Hill, Ontario, M1C 1A4.

ENVIRONMENT CANADA, FISHERIES AND MARINE. **Microbiology.** Research Associate / Postdoctoral Fellow required by 1st April 1979. The position is suitable for a recently qualified M.Sc., or Ph.D., in microbial ecology (male or female). The research project will involve forest pesticide spraying and evaluation of long-term microbiological effects in fresh water. Assessment of seasonal changes caused by forest pesticides on the functioning of various physiological groups of microorganisms in freshwater ponds will include microbial biomass and activity determinations involving light microscopy, ATP photometry and radio-tracer techniques. Contact Dr. D.J. Wildis Department of Fisheries and Oceans, Biological Station, St. Andrews, New Brunswick E0G 2X0. Salary will be based on NRC Postdoctoral Fellow scales, currently $15,675. Appointment will be for one year initially, with possibility of extension to second and third years.

MUSIC

UNIVERSITÉ D'OTTAWA. **Département de Musique.** 1. Compositeur. 2. Expérience considérable comme compositeur et réputation internationale. La compétence du (de la) candidat(e) sera jugée d'après ses oeuvres interprétées, enregistrées et publiées. Une bonne connaissance du français et de l'anglais est essentielle. 3. Enseignera la composition et les techniques modernes de création musicale au niveau du baccalauréat, et dirigera les ensembles de musique contemporaine. Un tiers de la charge d'enseignement pourra être dévolu à une discipline connexe, telle, l'écriture, l'instrumentation, l'orchestration, etc. 4. Rang et traitement en fonction des titres et de l'expérience. Pour l'année 1978-1979 les salaires minima sont: professeur adjoint, $17,462; professeur agrégé, $22,460; professeur titulaire, $28,992, plus une gamme complète de bénéfices marginaux. 5. Les candidatures devront comprendre un curriculum vitae détaillé ainsi que les noms et adresses d'au moins trois répondants. Keith MacMillan, directeur, Département de Musique, Université d'Ottawa, 1 rue Stewart, Ottawa, Ontario, K1N 6N5. 6. Le 1er juillet, 1979. 7. Le 1er mars, 1979.

UNIVERSITÉ D'OTTAWA. **Département de Musique.** 1. Musicologie. 2. Doctorat complété ou l'équivalent en musicologie; publications du haut niveau et / ou travaux de recherche dans l'une des périodes quelconques de l'histoire de la musique occidentale. Une bonne connaissance du français et de l'anglais est essentielle. 3. Enseigner des cours d'histoire de la musique offerts au niveau du Baccalauréat en Musique et du Baccalauréat ès Arts. L'équipe comprend déjà un musicologue médiéviste et une ethnomusicologue. Ce poste est ouvert en fonction d'un éventuel programme d'études supérieures en musicologie comparée. 4. Rang et traitement en fonction des titres et de l'expérience. Pour l'année 1978-1979 les salaires minima sont: professeur adjoint, $17,462; professeur agrégé, $22,460; professeur titulaire $28,992 plus une gamme complète de bénéfices marginaux. 5. Les candidatures devront comprendre un curriculum vitae détaillé ainsi que les noms et adresses d'au moins trois répondants. Keith MacMillan, directeur, Département de Musique, Université d'Ottawa, 1 rue Stewart, Ottawa, Ontario, K1N 6N5. 6. Le 1er juillet, 1979. 7. Le 1er mars, 1979.

UNIVERSITÉ D'OTTAWA. **Département de Musique.** 1. Direction chorale. 2. Doit avoir une expérience professionnelle considérable en tant que chef de choeur, préférablement dans un contexte universitaire, et avec un doctorat ou l'équivalent professionnel. Une bonne connaissance du français et de l'anglais est essentielle. 3. Développer un programme choral dans le département au niveau du baccalauréat; diriger les ensembles chorals du département de musique. Un tiers de l'enseignement pourra être dévolu à une discipline connexe, telle le solfège, l'écriture, l'histoire de la musique, etc. 4. Rang et traitement en fonction des titres et de l'expérience. Pour l'année 1978-1979 les salaires minima sont: professeur adjoint, $17,462; professeur agrégé, $22,460; professeur titulaire, $28,992 plus une gamme complète de bénéfices marginaux. 5. Les candidatures devront comprendre un curriculum vitae détaillé ainsi que les noms et adresses d'au moins trois répondants. Keith MacMillan, directeur, Département de Musique, Univeristé d'Ottawa, 1 rue Stewart, Ottawa, Ontario, K1N 6N5. 6. Le 1er juillet, 1978. 7. Le 1er mars, 1979.

UNIVERSITY OF OTTAWA. **Department of Music.** Choral Conductor. Must have considerable professional experience as choral conductor, preferably with university experience, and with doctorate or professional equivalent. Should have working facility in English and French. To develop a departmental choral program at the undergraduate level; to conduct choral ensembles of the Department of Music. One third of the total teaching load may be in a related discipline such as sight-singing and dictation, theory, history of music, etc. Rank and salary negotiable. 1978-1979 salary floors are Assistant Professor, $17,462; Associate Professor, $22,460; Full Professor, $28,992; extensive fringe benefits. Applications should include up-to-date curriculum vitae and names and addresses of at least three referees. Address to Keith C. MacMillan, Chairman, Department of Music, University of Ottawa, 1 Stewart St., Ottawa, Ontario, K1N 6N5. Date of appointment: July 1, 1979. Deadline for applications: March 1, 1979, or when position is filled.

UNIVERSITY OF OTTAWA. **Department of Music.** Musicologist. Must have doctorate in musicology or equivalent; publications of a high standard and / or historical research in a particular period of western civilization. A sound knowledge of English and French is essential. To teach B. Mus. and B.A. undergraduate students. The musicology staff already includes a medievalist and an ethnomusicologist; a program of graduate studies is envisaged in the future. A third of teaching load may be in another but related discipline. Rank and salary negotiable. 1978-1979 salary floors are: Lecturer, $13,569; Assistant Professor, $17,462; Associate Professor, $22,460; Full Professor, $28,992; extensive fringe benefits. Applications should include up-to-date curriculum vitae and names and addresses of three referees. Address to Keith C. MacMillan, Chairman, Department of Music, University of Ottawa, 1 Stewart St., Ottawa, Ontario, K1N 6N5. Date of appointment: July 1, 1979. Deadline for applications, March 1, 1979, or when position filled.

UNIVERSITY OF OTTAWA. **Department of Music.** Composer. Must have considerable experience as creative musician with reputation in Canada and abroad, and with proven record of performance, recording and publication. Should be able to teach in English and French. To teach undergraduate composition majors; to give courses in advanced techniques of contemporary composition and performance; to give workshops in contemporary music and to guide contemporary music groups. One third of the total teaching load may be in a related discipline such as theory, orchestration, etc. Rank and salary negotiable. 1978-1979 salary floors are Assistant Professor, $17,462; Associate Professor, $22,460; Full Professor, $28,992; extensive fringe benefits. Applications should include up-to-date curriculum vitae and names of at least three referees. Address to Keith C. MacMillan, Chairman, Department of Music, University of Ottawa, 1 Stewart St., Ottawa, Ontario, K1N 6N5. Date of appointment: July 1, 1979. Deadline for applications: March 1, 1979 or when position is filled.

UNIVERSITY OF WESTERN ONTARIO. **Faculty of Music.** The Faculty of Music of the University of Western Ontario invites applications for an appointment in the Department of Applied Music. 1. Trumpet Instructor. Rank open. Position subject to the availability of funds. 2. Qualifications: DMA or equivalent training; extensive national (Canadian) and international performance experience and significant teaching reputation. 3. Duties: Undergraduate and graduate individual and class trumpet instruction; ensemble coaching, solo recitals and faculty ensemble performances. The successful candidate will be encouraged to pursue an active professional career. 4. Salary: negotiable; commensurate with experience and qualifications. 5. Address all applications to: Professor Robert E. Creech, Chairman, Applied Music Department, Faculty of Music, The University of Western Ontario, London, Ontario, N6A 3K7. 6. Date of appointment: 1 July 1979 or 1 September 1979. 7. Closing date for applications: 30 April 1979 or when position filled.

UNIVERSITY OF WESTERN ONTARIO. **Faculty of Music.** The Faculty of Music of the University of Western Ontario invites applications for an appointment in the Department of Applied Music. 1. Bassoon Instructor. Rank open. Position subject to the availability of funds. 2. Qualifications: DMA or equivalent training; extensive national (Canadian) and international performance experience and significant teaching reputation. 3. Duties: Undergraduate and graduate individual and class bassoon instruction; ensemble coaching, solo recitals and faculty ensemble performances. The successful candidate will be encouraged to pursue an active professional career. 4. Salary: negotiable; commensurate with experience and qualifications. 5. Address all applications to: Professor Robert E. Creech, Chairman, Applied Music Department, Faculty of Music, The University of Western Ontario, London, Ontario, N6A 3K7. 6. Date of appointment: 1 July 1979 or 1 September 1979. 7. Closing date for applications: 30 April 1979 or when position filled.

UNIVERSITY OF WESTERN ONTARIO. **Faculty of Music.** The Faculty of Music of the University of Western Ontario invites applications for an appointment in the Department of Applied Music. 1. Oboe Instructor. Rank open. Position subject to the availability of funds. 2. Qualifications: DMA or equivalent training; extensive national (Canadian) and international performance experience and significant teaching reputation. 3. Duties: Undergraduate and graduate individual and class oboe instruction; ensemble coaching, solo recitals and faculty ensemble performances. The successful candidate will be encouraged to pursue an active professional career. 4. Salary: negotiable; commensurate with experience and qualifications. 5. Address all applications to: Professor Robert E. Creech, Chairman, Applied Music Department, Faculty of Music, The University of Western Ontario, London, Ontario, N6A 3K7. 6. Date of Appointment: 1 July 1979 or 1 September 1979. 7. Closing date for applications: 30 April 1979 or when position filled.

UNIVERSITY OF VICTORIA. **Department of Music.** Position in Piano: Professor. Principal Instructor of Piano. Qualifications: National and international reputation as soloist and chamber music performer. Extensive experience in Piano teaching. Duties: private instruction in Piano. Salary: Negotiable, 1978-79 floor: $29,125.00. Appointment Date: July 1, 1979. Closing Date: When position is filled. Immediate application urged. Apply to: Prof. Rudolf Komorous, Chairman, Department of Music, University of Victoria, Victoria, B.C. V8W 2Y2.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. **Department of Music.** Memorial University's Department of Music was established in September 1975. Anticipated enrollment for 1979-80 is 80 students with 8 full-time and 8 part-time teachers. The Department offers a four-year Bachelor of Music degree (with a major in Applied Music or Theory and Composition) and a five-year Conjoint Degrees programme with the Faculty of Education. 1. Title of Position: Lecturer or Assistant Professor. 2. Qualifications: Minimum of Master's Degree or equivalent; experience as studio teacher of violin and viola, and as a performer. Expertise in a secondary area an advantage. 3. Nature of Duties: Teach private lessons in violin and viola, class instruction in secondary strings; possibly conduct Chamber Orchestra and be required to teach courses in history, theory and / or aural perception. 4. Salary and Rank: Commensurate with qualifications and experience. 5. Effective Date of Appointment: September 1, 1979. 6. Applications: will be considered up to March 1, 1979 or when position is filled, and should include an up-to-date curriculum vitae, a tape recording of a recent performance, and the names and addresses of three referees. Applications should be addressed to: Mr. D. F. Cook, Head, Department of Music, Memorial University of Newfoundland, St. John's, Newfoundland, Canada, A1C 5S7.

NATIVE STUDIES

BRANDON UNIVERSITY. **Department of Native Studies.** Applications are invited for a one-year sabbatical replacement position in the Department of Native Studies, position subject to availability of funding. The appointment will be at the Lecturer or Assistant Professor level to teach Introduction to Native Studies and a senior level course in Research. Candidates should have completed their Ph.D. or ABD. Salary schedule under negotiation (1977-78: Lecturer $14,550; Assistant Professor $17,600). Candidates should send a Curriculum vitae, reprints, transcripts, teaching and research interests to Dr. Arthur W. Blue, Department of Native Studies, Brandon University, Brandon, Manitoba, R7A 6A9. Position to commence September 1, 1979.

NURSING

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. **School of Nursing.** Positions are available for the 1979-80 academic year in Medical-Surgical Nursing; Psychiatric Nursing; Community-Health Nursing; Maternal-Child Nursing; Primary Care Nursing; and also for a Pediatric Nurse Practitioner. Master's degree in clinical specialty and teaching experience is required. Salary commensurate with educational preparation and experience. Send curriculum vitae and names of three referees to: Miss Margaret D. McLean, Professor and Director, School of Nursing, Memorial University of Newfoundland, St.John's, Newfoundland, A1C 5S7, Canada.

UNIVERSITY OF BRITISH COLUMBIA. **School of Nursing.** Applications are invited for teaching positions in undergraduate and graduate programs. Master's or higher degree and experience in clinical field required. Positions open in July 1979. Candidates must be eligible for registration in B.C. Send resume to: Dr. Marilyn Willman, Director, School of Nursing, University of British Columbia, 2075 Wesbrook Place, Vancouver, B.C., Canada, V6T 1W5.

UNIVERSITY OF ALBERTA. **Faculty of Nursing.** The University of Alberta Faculty of Nursing invites applications to fill full-time or part-time teaching positions in undergraduate program. (These positions are contingent on funding for an expanded Post-R.N. baccalaureate program.) Major responsibilities for teaching senior undergraduate courses in all fields of nursing. Some opportunities for selected teaching in M.N. program and clinical joint appointments to appropriately qualified individuals. Requirements: Master's degree completed. Preference will be given to those with university-level teaching experience and/or recent clinical experience. The University of Alberta is an Equal Opportunity Employer. Deadline for application: 1 March 1979. Appointment to be made: 1 July 1979. Apply to: Dr. A.E. Zelmer, Dean, Faculty of Nursing, The University of Alberta, 3rd floor — Clinical Sciences Bldg., Edmonton, Alberta, T6G 2G3.

UNIVERSITY OF ALBERTA. **Faculty of Nursing.** The University of Alberta Faculty of Nursing invites applications for a Clinical Nurse Researcher position. A senior tenure — track position. Major responsibilities for developing an active clinical research program; some teaching in M.N. or senior undergraduate courses; possibility of joint appointment with clinical agency. Requirements: Ph.D. in nursing or related field, recent clinical experience; research and/or graduate teaching experience. The University of Alberta is an Equal Opportunity Employer. Deadline for application: 1 March 1979. Appointment to be made: 1 July 1979. Apply to: Dr. A.E. Zelmer, Dean, Faculty of Nursing, The University of Alberta, 3rd floor — Clinical Sciences Bldg., Edmonton, Alberta, T6G 2G3.

UNIVERSITY OF SASKATCHEWAN. **College of Nursing.** University of Saskatchewan College of Nursing, with 335 undergraduate students, invites applications for term or regular appointments to fill anticipated vacancies in an integrated, conceptually-based baccalaureate nursing program. Preference will be given to applicants with advanced preparation in clinical specialties. The successful applicant will be responsible for team teaching theory and clinical supervision of students. Salary will be commensurate with qualifications and experience. Effective date of appointment will be August, 1979 with closing date for receipt of applications May 31, 1979. Further information may be received from: Hester J. Kernen, Professor and Dean, College of Nursing, University fo Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

OCCUPATIONAL THERAPY

UNIVERSITY OF ALBERTA. **Department of Occupational Therapy.** Applications and nominations are invited for the position of chairman for the Department of Occupational Therapy. Candidates should possess graduate qualifications, a strong background in teaching, and experience in administration. Responsibilities will include some teaching at the undergraduate level, the development of an active research program, as well as administration. The position will be available from July 1, 1979. Salary scale: minimum salaries are: Associate Professor: $24,060.00. Full Professor: $31,680.00. Qualified persons should send their curriculum vitae and the names of three references to: F.B. Wilson, Ph.D., Dean, Faculty of Rehabilitation Medicine, University of Alberta, Edmonton, Alberta, T6G 2E9. Canada.

UNIVERSITY OF BRITISH COLUMBIA. **School of Rehabilitation Medicine.** Faculty Position — Occupational Therapy. Applications are invited for the position of Head of the Division of occupational therapy for July 1979. The School offers a program of combined education in occupational therapy and physiotherapy which leads to a Bachelor of Science Degree in Rehabilitation (B.S.R.). Duties will include teaching (preferably in area of physical dysfunction), continued development of the educational program in the division of occupational therapy, and development of a Master's level program. Qualified candidates should possess a Master's degree (Ph.D. preferred) and a minimum of five years experience including direct service, administration and teaching, and demonstrated committment to interdisciplinary efforts. Rank and salary will be negotiable. Interested persons should send detailed curriculum vitae and names of two referees to the Director of the School of Rehabilitation Medicine, Room 331, Instructional Resources Centre, University of British Columbia, Vancouver, B.C. V6T 1W5.

PEDIATRIC PATHOLOGY

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. **Pediatric Pathology.** Memorial University of Newfoundland and The Janeway Child Health Centre. A Pathologist with an interest in and / or experience in Pediatric Pathology is required to fill an academic post in this specialty. This full time University post will be a joint appointment with The Janeway Child Health Centre. The Regional Children's Hospital has 230 active beds, multidisciplinary and departmentalized; there are approximately 3,000 surgicals and 50 autopsies per annum. The present staff includes a Pathologist. Geneticist, Biochemist and Immunologist. The duties include surgical and autopsy service work.

An interest in one of the clinical pathology disciplines is desirable as is a special interest in Kidney biopsy work. A background of training in research is an asset, as this aspect will be encouraged. The applicant will be expected to take an active part in the Undergraduate and Postgraduate teaching programs. Salary and rank will be determined by academic and service experience. Inquiries should be directed to J. S. Campbell, MD., FRCP(C), Professor and Chairman, Discipline of Pathology, Memorial University of Newfoundland, St. John's, Newfoundland, Canada. A1B 3V6.

PHILOSOPHY

UNIVERSITY OF REGINA. CAMPION COLLEGE. **Philosophy.** 1. Two year term appointment at the assistant professor or lecturer level. 2. Ph.D. or near, with good background in the history of philosophy and an interest in Ethics is required. 3. Teaching introductory and upper level undergraduate courses. 4. Present Floors: Lecturer, $14,081, and Assistant Professors, $17,932. 5. Dr. George J. Marshall, Chairman, Dept. of Philosophy, Campion College, University of Regina, Regina, Saskatchewan. 6. July 1, 1979. 7. March 15, 1979.

PHYSICAL EDUCATION

MCMASTER UNIVERSITY. **School of Physical Education and Athletics.** Applications are invited for a position as Lecturer in the School of Physical Education and Athletics. Primary duties will include the coaching and teaching of track and field. Additional teaching qualifications in health and / or fitness and conditioning are desirable. A Master's degree is preferred. This is a 9-month contractually limited appointment. Letters of application, together with a curriculum vitae, and two letters of reference should be sent to Dr. Frank J. Hayden, Director, School of Physical Education and Athletics, McMaster University, Hamilton, Ontario, L8S 4K1.

UNIVERSITY OF SASKATCHEWAN. **College of Physical Education.** Title of Position: Assistant Professor. Qualifications Required: Ph.D. preferred. Nature of Duties: Primary responsibility for the teaching of gymnastics. Other academic and applied competences should be stated. Salary Offered: Commensurate with qualifications and experience. Send Inquiries and Applications to: Dr. J. Dewar, Dean, College of Physical Education, University of Saskatchewan, Saskatoon, Sask., S7N 0W0, including curriculum vitae and names of three referees. Effective date of Appointment: July 1, 1979. Closing Date for Receipt of Applications: February 28, 1979.

UNIVERSITY OF SASKATCHEWAN. **College of Physical Education.** Title of Position: Assistant Professor (dependent on budgetary approval). Qualifications Required: Ph.d. preferred. Nature of Duties: Primary responsibilities in the area of elementary physical education. Related research ability and experience in the socio-cultural area should be stated. Salary offered: Commensurate with qualifications and experience. Send Inquiries and Applications to: Dr. J. Dewar, Dean, College of Physical Education, University of Saskatchewan, Saskatoon, Sask., S7N 0W0, including curriculum vitae and names of three referees. Effective Date of Appointment: July 1, 1979. Closing date for Receipt of Applications: February 28, 1979.

UNIVERSITY OF SASKATCHEWAN. **College of Physical Education.** Title of Position: Assistant Professor (Sabbatical replacement). Qualifications Required: Ph.D. preferred. Nature of Duties: Primary responsibilities in the area of football. Other academic and applied competencies should be stated. Salary Offered: Commensurate with qualifications and experience. Send Inquiries and Applications to: Dr. J. Dewar, Dean, College of Physical Education, University of Saskatchewan, Saskatoon, Sask., S7N 0W0, including curriculum vitae and names of three referees. Effective Date of Appointment: July 1, 1979. Closing Date for Receipt of Applications: February 28, 1979.

PHYSICAL THERAPY

QUEEN'S UNIVERSITY. SCHOOL OF REHABILITATION THERAPY. **Division of Physical Therapy.** Applications are invited for a full-time position as Assistant Professor in the Division of Physical Therapy to coordinate teaching and research in the neuro-physiological approach to therapeutic exercise. Graduate degree and appropriate clinical experience essential. Duties to commence July 1, 1979. Salary according to qualifications and experience. Applications, together with curriculum vitae and the names of three referees should be submitted before February 28, 1979 to: Mr. R. P. Walmsley, Associate Professor, Division of Physical Therapy, School of Rehabilitation Therapy, Queen's University, Kingston, Ontario, Canada, K7L 3N6.

PHYSICS

SIMON FRASER UNIVERSITY. **Department of Physics.** Postdoctoral fellowship, minimum 2 years, for research involving the development and application of the Extended X-ray Absorption Fine Structure (EXAFS) technique to condensed matter. Experiments are done during field trips to the Stanford Synchrotron Radiation Laboratory. Current projects involve temperature and pressure dependent investigations of metals, semiconductors and salts in the solid and liquid states, plus aqueous solutions and enzymes. Initial salary $990 / month. Applications with curriculum vitae and the names of at least two referees should be sent to: Dr. E. D. Crozier, Department of Physics, Simon Fraser University, Burnaby, B.C. V5A 1S6. Canada.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. **Department of Physics.** Faculty Position in Theoretical Molecular Physics. Applications are invited for an appointment (subject to the availability of funds) as Assistant or Associate Professor to commence on September 1, 1979. The applicant must have a Ph.D. degree in Physics with several years of research experience at post-doctoral level in the areas of theoretical studies which can be identified with one or more of the experimental projects undertaken by the present members of the Molecular Group in the Department. The research interests of the Group include: Collision-induced infrared absorption spectroscopy, emission spectroscopy, Brillouin and Raman scattering studies of liquids and single-crystals, stimulated light scattering, and spectroscopy using tunable lasers. Duties of the appointee will include the teaching of senior undergraduate and graduate courses. Previous teaching experience at the university level will be an important asset. The applications with appropriate personal data including the names of three referees should be sent not later than February 28, 1979, to: Professor C.W. Cho, Head, Department of Physics, Memorial University of Newfoundland, St. John's, Newfoundland, Canada, A1B 3X7.

UNIVERSITY OF BRITISH COLUMBIA. **Physics Department.** A research associate or postdoctoral fellowship is available with the Plasma Physics Group at The University of British Columbia. Research interests include plasma dynamics, plasma spectroscopy and laser-plasma interactions. An experimentalist is preferred. For further details contact A. J. Barnard, Physics Department, University of British Columbia, Vancouver, V6T 1W5.

PHYSIOLOGY

QUEEN'S UNIVERSITY. **Department of Physiology.** Postdoctoral Fellow (MRC support), first or second year post-Ph.D. Position available April 1, 1979. Laboratory with active program in mechanisms governing release of pituitary hormones, role of cyclic nucleotides in growth hormone release, identification and control of secretion of pars intermedia peptides (ACTH, MSH, LPH, endorphins), ionic events at the plasma membrane associated with the release process. Applications, including CV and names of three referees should be sent to Dr. J. Kraicer, Department of Physiology, Abramsky Hall, Queen's University, Kingston, Ontario K7L 3N6.

QUEEN'S UNIVERSITY. **Department of Physiology.** Post-doctoral Fellowship. - Applications are invited from recent graduates with experience and an interest in the electrophysiology of mammalian central nervous systems. Applications to Dr. V. C. Abrahams, Head, Department of Physiology, Abramsky Hall, Queen's University, Kingston, Ontario. K7L 3N6.

PLANT SCIENCE

UNIVERSITY OF BRITISH COLUMBIA. **Department of Plant Science.** Applications are invited for the position of Assistant Professor of Horticulture in the Department of Plant Science, University of British Columbia. Qualifications include a Ph.D. in Horticulture or a related field with special interests in ornamentals and floriculture. While the position involves teaching and research, the successful applicant also will be expected to develop a strong extension programme serving the urban community and the horticultural industry. Salary commensurate with qualifications and experience. Submit curriculum vitae and direct three letters of reference to Dr. G. W. Eaton, Selection Committee, Department of Plant Science, University of British Columbia, 2075 Wesbrook Mall, Vancouver, B.C. Canada, V6T 1W5. The expected date of appointment is July 1, 1979. The closing date for application is when the position is filled.

UNIVERSITY OF BRITISH COLUMBIA. **Department of Plant Science.** Applications are invited for a faculty position in weed science at the Assistant Professor level in the Department of Plant Science, University of British Columbia. Qualifications include a Ph.D. in weed science or related field. The position involved undergraduate and graduate teaching, as well as research and extension in weed science. Salary will be commensurate with qualifications and experience. Submit curriculum vitae and direct three letters of reference to Dr. P. A. Jolliffe, Selection Committee, Department of Plant Science, University of British Columbia, 2075 Wesbrook Mall, Vancouver, B.C. V6T 1W5. The expected date of appointment is July 1, 1979. The closing date for applications is March 15, 1979.

POLITICAL SCIENCE

UNIVERSITY OF NEW BRUNSWICK. **Division of Social Science. Political Science.** University of New Brunswick at Saint John, Division of Social Science. Subject to budgetary approval, two positions to be filled in the undergraduate Political Science program. One vacancy in Canadian and Comparative Politics and / or International Politics; second vacancy in Public Administration and / or Local Government. Positions will involve teaching and research. Preference for Canadian citizens or landed immigrants, and completed Ph.D. Appointments at Assistant Professor rank or above; salary negotiable within established guidelines. Appointments will commence July 1, 1979, if possible, for fall term. Applications, with detailed curriculum vitae, supporting documentation, and names of three referees, may be sent to Professor R. E. Garland, Chairman, Division of Social Science, University of New Brunswick, P.O. Box 5050, Saint John, New Brunswick, E2L 4L5.

BROCK UNIVERSITY. **Department of Politics.** (1) Lecturer; (2) Ph.D. and teaching experience preferred; (3) Political Philosophy, to teach two undergraduate courses in political philosophy; (4) salary commensurable with qualifications and experience; (5) applications with the names of 3 referees to be directed to the Chairman of the Search Committee, Department of Politics, Brock University, St. Catharines, Ontario. L2S 3A1; (6) one year appointment, commencing on July 1, 1979; (7) deadline for applications February 28, 1979.

SAINT MARY'S UNIVERSITY. **Department of Political Science.** One nine-month terminal appointment at the Lecturer or Assistant Professor I level. 1978-79 salary range $14,980 - $17,230 to be renegotiated. Teaching responsibilities in the area of Canadian Government and Politics. Ph.D. preferred. Applications, curriculum vitae and names of three referees to be sent to Guy Chauvin, Chairperson, Department of Political Science, Saint Mary's University, Halifax, Nova Scotia, B3H 3C3. Materials must be received by March 1, 1979.

BRANDON UNIVERSITY. **Department of Political Science.** Vacancy: One year sabbatical replacement, subject to budgetary approval. Position: Lecturer or Assistant Professor. Qualifications: Ph.D. in hand or near completion. Teaching Areas: International Relations (main); Political Thought and Introductory (supplementary). Salary: 1978-79 scales under negotiations. 1977-78 scales were - Assistant Professor, $17,600; Lecturer, $14,500. Effective Date: 1 September 1979. Application: Send applications with c.v., transcripts, and names of three referees to Dr. M. V. Naidu, Chairman, Department of Political Science, Brandon University, Brandon, Manitoba, R7A 6A9. Closing Date: March 15, 1979, or until appointment is made.

MCMASTER UNIVERSITY. **Department of Political Science.** Applications are invited for the anticipated position at the Lecturer or Assistant Professor level to teach mainly undergraduate courses to full-time and part-time students. Research interests in International Relations Theory or in African and / or Latin American Politics would be an asset. Resume and letters of reference should be addressed to Dr. Adam Bromke, Chairman, Department of Political Science, McMaster University, Hamilton, Ontario L8S 4M4. Deadline for receipt of applications: 28 February 1979.

UNIVERSITY OF TORONTO. **Political Science.** 1. All professorial ranks considered. 2. Ph.D. 3. Political Theory. 4. Commensurate with qualifications. 5. Professor Ian Drummond, Chairman, Department of Political Economy, University of Toronto, 100 St. George Street, Toronto M5S 1A1, Canada. 6. 1 July 1979. 7. 1 March 1979.

QUEEN'S UNIVERSITY AND ROYAL MILITARY COLLEGE OF CANADA. **Department of Political Science and Economics.** Applications are invited for: 1. A shared position as Visiting Research Associate at the Royal Military College and at the Centre for International Relations, Queen's University, Kingston. Appointment from 1st September 1979 for one year. Field: International Relations: Specialty: Strategic Studies. Completed or near completed Ph.D. required. Applications with C.V. and other relevant information to Professor H. Binhammer, Department of Political Science and Economics, RMC and Professor N. Orvik, Centre for International Relations, Queen's University, Kingston, Ontario, K7L 3N6. 2. The Centre also has an open position from September 1979 for a Research Assistant in Strategic Studies. Completed MA required (International Relations).

UNIVERSITY OF ALBERTA. **Department of Political Science.** Applications are invited for the following positions: 1. Tenurable Assistant Professor Position, beginning July 1, 1979. International Politics with specialization preferred in international theory and Canadian Foreign Policy. Ph.D. required and both teaching experience and evidence of focussed research interests definite assets. Responsibilities include both undergraduate and graduate teaching in international politics and Canadian foreign policy, graduate teaching in International Theory, and Graduate Supervision. Floor for Assistant is currently $18,530. 2. Several sessional positions. All 8-month appointments beginning September 1, 1979. Rank and salary vary depending on qualifications and experience. Ph.D. or ABD, with some teaching experience, required. Responsibilities include teaching in one or more of the following areas: Introductory Canadian Government, Introduction to Government and Politics, and International Politics. All positions are contingent on budgetary conditions. Men and women are equally invited to apply for all positions. Send curriculum vitae and names of at least three referees by March 1, 1979 to R. R. Gilsdorf, Acting Chairman, Department of Political Science, University of Alberta, Edmonton, Alberta, T6G 2H4.

PSYCHOLOGY

DALHOUSIE UNIVERSITY. **Department of Psychology.** Clinical Psychology. The Psychology Department at Dalhousie University seeks applicants for a tenure track position in clinical psychology at the Assistant Professor level, commencing July 1, 1979. Candidates must have a strong empirical-scientific background and research interests complementary to those of the present staff. They should be prepared to take part in the development of an anticipated graduate program in clinical psychology. Candidates should send curriculum vitae, names of three referees, and reprints to: Dr. M. Ozier, Co-ordinator, Clinical Search Committee, Department of Psychology, Dalhousie University, Halifax, Nova Scotia, Canada, B3H 4J1. All appointments at Dalhousie are subject to the availability of suitable funds.

LAURENTIAN UNIVERSITY. **Department of Psychology.** Developmental and Educational Psychologist. Associate or Assistant Professor of Academic and professional maturity. To teach pertinent undergraduate courses and help develop multidisciplinary Master's Programme in Child and Development. Ph.D. degree and experience. Bilingual preferred. Position probationary beginning 1 July, 1979. Salary bases (1978-1979): Associate, $23,900.00; Assistant $19,143.00. Please submit curriculum vitae and have three references sent to: Dr. M. Moroz, Chairman, Department of Psychology, Laurentian University, Sudbury, Ontario, Canada, P3E 2C6.

TRENT UNIVERSITY. **Department of Psychology.** The Department of Psychology, Trent University, wishes to make two appointments (tenure stream and / or sessional), subject to budgetary approval, at the Assistant and the mid-Associate Professor level, and invites applications for these positions. Candidates must have the Ph.D. and active commitments to both research and teaching; experience in supervision of graduate work is desirable for the more senior position. Applications in the applied and clinical areas are particularly encouraged, but individuals in all areas may be considered. Candidates should send a complete curriculum vitae, statement of teaching and research interests, and names of three references to: Professor Gordon Winocur, Department of Psychology, Trent University, Peterborough, Ontario, K9J 7B8.

MCMASTER UNIVERSITY. **Department of Psychology.** The Department of Psychology invites applications for a term (tenure track) appointment at the Assistant or junior Associate Professor level commencing July 1 or September 1, 1979. Salary and level of appointment will be dependent on qualifications: minimum for an Assistant Professor is $17,000 in 1978-79 and $21,950 for an Associate Professor. Applicants with an interest in the physiological and other biological approaches to behaviour will be considered. Preference will be given to applicants who are eligible for employment in Canada at the time of application. Send vitae, reference letters and reprints to: Search Committee, Department of Psychology, McMaster University, Hamilton, Ontario, Canada, L8S 4K1.

CONCORDIA UNIVERSITY. **Psychology Department.** The Psychology Department anticipates a possible opening at the level of Assistant or Associate Professor in the area of Clinical Psychology and / or Counselling related to the rehabilitation of the sensorily handicapped, especially the blind or visually handicapped. Applicants should have had considerable experience in working with the visually and / or auditorily handicapped. Duties will include graduate teaching in the area of psychological assessment of the visually handicapped, supervision of Masters and Doctoral students in practicum counselling of the visually handicapped and thesis research, and general participation in the graduate programme. Duties also include undergraduate teaching, preferably but not necessarily, in the areas of human motivation and personality. Applicants should send their curriculum vitae and three letters of reference to: — The Chairman, Department of Psychology, Concordia University, Sir George Williams Campus, The Hall Building, 1455 de Maisonneuve West, Montreal, Quebec, H3G 1M8.

ACADIA UNIVERSITY. **Department of Psychology.** The Psychology Department at Acadia University expects to have a one-year sabbatical replacement position at the Assistant or Associate Professor level available in Experimental Psychology during the 1979-80 academic year. Applicants for the position should have a Ph.D. in Psychology and be prepared to teach introductory psychology, one undergraduate methods course, and courses in one or more of the areas of cognitive psychology. Preference will be given to Canadian Citizens and Landed Immigrants. Prospective candidates should send a letter of application along with a complete vitae to Dr. Verne R. Bacharach, Chairperson, Search Committee, Department of Psychology, Acadia University, Wolfville, Nova Scotia. B0P 1X0.

UNIVERSITY OF SASKATCHEWAN. **Department of Psychology.** University of Saskatchewan, Department of Psychology, has an opening for a tenurable Assistant Professor position in the clinical areas beginning July 1, 1979, subject to budgetary confirmation. Candidates must have a doctoral degree in clinical psychology, an internship and demonstrated competence in teaching, research and clinical skills. Applicants with a strong generalist scientist / professional background and specialization in one of the following areas are encouraged to apply: personality theory and assessment, clinical child, interpersonal-dynamic psychotherapy. Duties include undergraduate teaching, graduate teaching and clinical and research supervision in the clinical doctoral program, and maintaining a productive program of research. The Department is committed to the continued development of a high quality clinical doctoral program. Salary range for Assistant Professors for 1978-79 is 18,415 to 25,483. Applications including a vitae, three letters of recommendation and reprints, should be sent to K. V. McDowell, Head, Department of Psychology, University of Saskatchewan, Saskatoon, Sask. S7N 0W0.

UNIVERSITY OF MANITOBA. **Department of Psychology.** Applications are invited for a probationary appointment at the Assistant Professor level in the area of quantitative methods. Candidates should be qualified to teach graduate courses in multivariate and univariate statistical techniques and have an established interest in the development of multivariate statistical analysis. In addition the applicant should be prepared to supervise graduate students in the quantitative area and provide a consultative service to staff and students. Persons currently entitled to work in Canada are encouraged to apply. The position is available July 1, 1979. Correspondence should be directed before January 31, 1979 to John S. McIntyre, Head, Department of Psychology, University of Manitoba, Winnipeg, Manitoba, R3T 2N2.

UNIVERSITY D'OTTAWA. **École de Psychologie.** L'École de Psychologie de l'Université d'Ottawa prévoit avoir quelques postes vacants au niveau de professeur adjoint, agrégé, et / ou titulaire. Ces postes comprennent de l'enseignement au niveau prédiplômé et / ou diplômé, de la recherche, et de l'entraînement clinique. Les qualifications minimums sont: doctorat en psychologie; expérience en enseignement et en recherche (1) en psychologie clinique-counselling et / ou (2) psychologie clinique-de l'enfant; connaissance et habileté en français et en anglais. L'échelle de salaire de l'année courante est: Maximum $47,758; (Assistant — minimum: $17,462; Agrégé — minimum: $22,460; Titulaire — minimum: $28,992). Les postes seront ouverts à partir du 1er juillet 1979. Les candidatures doivent être soumises avant le 1er mars 1979. Adressez une lettre accompagnée d'une curriculum vitae, du nom et de l'adresse de trois répondants, ainsi que des tirages à part de deux publications récentes ou tout autre élément attestant le travail académique: Dr. Joseph De Koninck, École de Psychologie, Université d'Ottawa, Ottawa, Ontario, Canada, K1N 6N5.

UNIVERSITY OF OTTAWA. **School of Psychology.** Clinical Psychologists. The University of Ottawa School of Psychology expects to have several openings at the Assistant, Associate, and / or Full Professor level. These are permanent tenure-track positions involving graduate and / or undergraduate teaching, research, and clinical training. Minimum qualifications are: doctorate in Psychology; teaching and research experience in (1) Clinical-counselling Psychology and / or (2) Clinical-child Psychology; knowledge and competency in English and French. Salary range for the current academic year is: Maximum $47,758 (Assistant Professor — minimum: $17,462.; Associate Professor — minimum: $22,460.; Full Professor — minimum: $28,992). Positions commence July 1, 1979. Applications must be received before March 1, 1979. Submit a letter of application, vitae, names and addresses of three references and two recent publications from refereed journals or visible evidence of scholarly activity to: Dr. Joseph De Koninck, School of Psychology, University of Ottawa, Ottawa, Ontario, Canada, K1N 6N5.

UNIVERSITY OF GUELPH. **Department of Psychology.** Applications are invited for a tenure-line appointment in Developmental Psychology at the rank of Assistant Professor or Associate Professor commencing September 1, 1979. Applicants must have an active research program in Learning Disabilities or Retardation. Candidates must be able to teach a selection of undergraduate courses which include: Introduction to Developmental Psychology, and Maladjustment; and graduate courses in Learning Disabilities; or Behavior Disturbance; or Technique of Behavior Change. An ability to teach personality assessment of children at the graduate level would be highly desirable, but is not essential. Applicants must have completed the Ph.D. and have demonstrated an active interest in teaching and research. This position is subject to final budgetary approval. Enquiries and applications including a complete curriculum vitae, copies of publications and the names of three referees should be sent to Dr. A. Daniel Yarmey, Appointments Officer, Department of Psychology, University of Guelph, Guelph, Ontario, N1G 2W1.

ACADIA UNIVERSITY. **Department of Psychology.** The Department of Psychology at Acadia University will make one and possibly two faculty appointments to its community-clinical program for 1979-80. These are tenure-stream positions, and can be made at the Assistant or Associate Professor level. There is a small graduate program, and new faculty members can anticipate supervising research and practicum experience of Master's level students, in addition to teaching appropriate undergraduate courses. The applicant must have a Ph.D. and should have appropriate internship or post-doctoral experience. It is hoped to find people with a range of skills, experience, and interests in the general areas of community and clinical psychology, and evidence of scholarly activity. Prospective applicants should note that Acadia operates under a Collective Agreement which specifies in part that there shall be no discrimination in hiring because of age, race, creed, colour, national or ethnic origin, political or religious affiliation or belief, gender, lawful sexual activity, or marital status. When qualifications for an opening are substantially equal the Selection Committee must recommend the appointment of the Canadian candidate. Applicants are requested to send a curriculum vitae, and to ask three or more referees to write to the Search Committee on their behalf. Enquiries about the program, the University, location, etc., prior to making application will be welcome. Address all correspondence to: Dr. Patrick O'Neill, Chairperson, Search Committee, Department of Psychology, Acadia University, Wolfville Nova Scotia, B0P 1X0, Canada.

BISHOP'S UNIVERSITY. **Department of Psychology.** Applications are invited for a position at the Assistant or Associate Professor level, (tenure-stream appointment). The post's duties will include teaching the equivalent of three full-year under-graduate courses (in English) including Abnormal Psychology and Personality A doctorate in psychology is required and some teaching experience is desirable. Some knowledge of French would be an additional asset. The current salary floors of the University are as follows: Lecturer $16,640., Assistant Professor, $20,800., Associate Professor $27,040. The position is tenable on July 1, 1979. Applicants should send curriculum vitae, the names of three referees and, if possible, copies of recent publications to Dr. T. A. Judson, Chairman, Division of Social Sciences, Bishop's University, Lennoxville, Quebec J1M 1Z7.

UNIVERSITY OF OTTAWA. **School of Psychology.** Director, Child Study Centre. The Child Study Centre is an internal training unit of the School of Psychology of the University of Ottawa. Its goal is to serve as a training and research centre while providing highly qualified assistance and treatment of children with emotional and learning difficulties. The basic philosophy and treatment of the Centre is dynamic-holistic and humanistic. Furthermore, its approach relies on the presence of normal children who serve as normalizers. The Centre offers a complete school program, its activities continue throughout the year, and include a summer camp. While up to 30 children are in residence, 60 additional children receive day care. The Centre is mainly funded by the Ontario Ministry of Community and Social Services and licensed under the Children Mental Health Centers Act. It is housed in a modern six-story building comprising a residence, classroom facilities, play area, therapy area, gymnasium, and a cafeteria. As of July 1st, 1979 a new Director of the Centre will be appointed. The position of Director is also a tenure-track position at the rank of Associate or Full Professor within the School of Psychology. The minimum qualifications are: doctorate in Psychology, several years of teaching and research experience in clinical child psychology, preferably within the dynamic-humanistic approach, experience in administration, and knowledge and competency in English and French. Minimum salary is $30,000 and depends on qualifications and experience. Applications must be received before March 1st, 1979 and should be accompanied by a curriculum vitae and names and addresses of four references. Applications and requests for information should be addressed to: Dr. Joseph De Koninck, Director, School of Psychology, University of Ottawa, Ottawa, Ontario, Canada, K1N 6N5.

UNIVERSITÉ D'OTTAWA. **École de Psychologie.** Directeur, Centre d'Étude de l'Enfant. Le Centre d'Étude de l'Enfant est une unité interne d'entraînement au sein de l'École de Psychologie de l'Université d'Ottawa. Le but principal de ce Centre est de servir de centre d'entraînement et de recherche tout en offrant un traitement et de l'aide hautement qualifiée à des enfants affectés par des troubles émotifs et d'apprentissage. L'approche thérapeutique s'inspire des courants dynamiques et humanistiques. De plus, cette approche repose sur la présence d'enfants normaux qui jouent un rôle normalisant. Le Centre offre un programme scolaire complet, et ses activités se poursuivent durant toute l'année et incluent aussi un camp d'été. Bien que 30 enfants peuvent être gardés en résidence, 60 autres enfants sont inscrits aux programmes de jour. Le centre opère en partie grâce à une subvention du Ontario Ministry of Community and Social Services et est licencié par le Children Mental Health Centers Act. Le centre est logé dans un édifice moderne de six étages comprenant une résidence, une école, des salles de jeux, des salles de thérapie, un gymnase et une cafetéria. À compter du 1er juillet 1979, un nouveau directeur du Centre sera nommé. Le poste de directeur est aussi un poste de professeur régulier au rang d'agrégé ou de titulaire au sein de l'École de Psychologie. Les exigences minimum sont: le doctorat en psychologie, une expérience substantielle dans l'enseignement et la recherche en psychologie clinique-de l'enfant, de préférence dans le cadre de l'approche dynamique et humanistique, de l'expérience en administration et une maîtrise du français et de l'anglais. Le salaire minimum sera de $30,000 et dépendra de l'expérience et de la compétence. Les candidatures devraient être soumises avant le 1er mars 1979, et être accompagnées d'un curriculum vitae ainsi que des noms et adresses de quatre répondants. Toute demande devrait être adressée à: Dr. Joseph De Koninck, Directeur, École de Psychologie, Université d'Ottawa, Ontario, Canada, K1N 6N5.

UNIVERSITY OF TORONTO, SCARBOROUGH COLLEGE. **Psychology, Division of Life Sciences.** Applications are invited for a two-year contractually-limited appointment in developmental psychology. The applicant should have a

Ph.D. in psychology. Attention will especially be given to specialization in the area of social development. In addition, teaching effectiveness at the undergraduate level is of particular importance. Current salary floor is $16,500. The appointment is from July 1, 1979 to June 30, 1981. Curriculum vitae and three letters of reference should be sent to Dr. Karen Dion, Associate Chairman — Psychology Division of Life Sciences, Scarborough College, University of Toronto, West Hill, Ontario, M1C 1A4.

RECREATION

UNIVERSITY OF WATERLOO. **Department of Recreation.** 1. Assistant or Associate Professor in Recreation Management. 2. Earned doctorate or its near completion in related discipline. 3. Ability to successfully supervise student theses and honors projects with a broad Interdisciplinary view to graduate and undergraduate instruction and continued involvement and participation in professional organizations with a demonstrated competence and commitment to scholarship. 4. Assistant professor (minimum $17,500) Associate professor (minimum $22,700). Salary commensurate with qualifications and experience. 5. Dr. David Ng, Chairman, Department of Recreation, University of Waterloo, Waterloo, Ontario, N2L 3G1. 6. July 1979. Subject to the availability of funds. 7. Until position filled. First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

RELIGIOUS STUDIES

UNIVERSITY OF REGINA, CAMPION COLLEGE. **Religious Education.** 1. Assistant Professor or Associate Professor (tenure stream). 2. Ph.D. and publication or adequate practical experience with background in methodology. 3. Teaching upper level undergraduate courses and supervision of interns. 4. Salary commensurate with qualifications. 5. Rev. John Molloy, Campion College, University of Regina, Regina, Saskatchewan. 6. July 1, 1979. 7. March 15, 1979.

UNIVERSITY OF REGINA, CAMPION COLLEGE. **Department of Religious Studies.** 1) Assistant Professor — two year appointment. 2) Ph.D. in Religious Studies preferred. 3) Teaching Undergraduate Courses in Hinduism and/or Buddhism, and Aspects of Roman Catholic Thought. 4) Salary: Floor of the Assistant Professor Rank. 5) Rev. Isidore H. Gorski, Campion College, University of Regina, Regina, Saskatchewan, S4S 0A2. 6) July 1, 1979. 7) April 15, 1979.

UNIVERSITY OF TORONTO. **Department of Religious Studies.** The University of Toronto, Department of Religious Studies is seeking to fill a two year contractually limited term appointment at the Assistant Professor rank in World Religions at its Erindale campus. Applicants must have a Ph.D. with primary competence in the comparative and historical study of world religions and particular competence in the religious literature of the Middle East. Appointment will commence July 1, 1979. Closing date for applications will be March 15, 1979. Applications, with detailed curriculum vitae and the names of three referees, may be sent to Professor L.J. Elmer, Chairman, Department of Religious Studies, University of Toronto, 110 Charles Street W., Toronto, Ontario, M5S 1A1.

SAINT PAUL UNIVERSITY. **Faculty of Theology.** Applications are invited for three teaching positions in Catholic theology; all are tenure track positions. Appointment will commence September 1, 1979. Salary in accordance with rank and qualifications. Application, curriculum vitae and three references to be sent to Dean, Faculty of Theology, Saint Paul University, 223 Main Street, Ottawa, K1S 1C4. Deadline for applications is February 28, 1979. First position: Assistant professor. Doctorate and a minimum of two years of teaching experience in Catholic theology. Ability to work on Greek and Latin source-texts. Working knowledge of German, Spanish and/or Italian. Ability to teach in English and French. Duties include graduate and undergraduate teaching in Patristics and Systematics (Ecclesiology, Mysteries of God and Christology). Second position: Assistant professor or lecturer. Doctorate. Good understanding of spoken French is essential. Ability to teach in French, knowledge of ancient and modern languages, and training to teach in pastoral care programs will be assets. Duties include undergraduate, and eventually graduate, teaching in Sacramental Theology and Protestant Theologies. Troisième poste: Adjoint ou chargé d'enseignement. Doctorat. Bonne compréhension de l'anglais parlé est essentielle. Autres qualifications qui seront considérées: capacité d'enseigner en anglais, connaissance des langues anciennes et modernes, préparation pour enseigner dans des programmes de pastorale. La principale responsabilité sera l'enseignement au niveau sous-gradué, et éventuellement au niveau gradué, en théologie dogmatique (la question de Dieu, la christologie, et possiblement l'écclésiologie ou la théologie sacramentaire).

SLAVIC STUDIES

UNIVERSITY OF MANITOBA. **Department of Slavic Studies.** The Department of Slavic Studies invites applications for a term position in Ukrainian language and literature, effective July 1, 1979. A second specialization in Russian or Polish, and Canadian experience would be an asset. Requirements are Ph.D. or equivalent, native knowledge of Ukrainian, and teaching experience. Assistant Professor rank; salary floor (1977-78) $16,480. Candidates should submit curriculum vitae, list of publications and names of three referees. Closing date for applications is February 15, 1979. Applications are to be addressed to Dr. J. Rozumnyj, Head, Department of Slavic Studies, University of Manitoba, Winnipeg, Manitoba. R3T 2N2.

SOCIAL SCIENCES

LAURENTIAN UNIVERSITY. **Department of Social Sciences.** Laurentian University plans to commence a multidisciplinary Master's Degree Programme in Child and Development Studies, with participation of Physical Education, Psychology, and Sociology. Applications are invited for the position of Coordinator of this Programme. Appointment will be at the rank of Associate or Full Professor. Qualifications: 1. A doctorate or the equivalent. 2. Demonstrated research and teaching competence in a relevant area of human development. 3. Multi-disciplinary experience an asset. 4. Bilingual candidates preferred.. Responsibilities: To coordinate, develop, and participate in multidisciplinary teaching and research. Requests for further details and applications for the position should be addressed to Prof. K.W. Schwager, Dean of Social Sciences, Laurentian University, Sudbury, Ontario, P3E 2C6. This position is subject to budgetary approval.

SOCIOLOGY ANTHROPOLOGY

UNIVERSITÉ LAURENTIENNE. **Département de Sociologie et d'Anthropologie.** Le Département de Sociologie et d'Anthropologie cherche un chargé de cours ou professeur adjoint dont l'engagement sera d'un an en remplacement d'un congé sabbatique. Les candidats devront avoir le doctorat ou être à rédiger la thèse. On accordera la préférence aux candidats bilingues. Il s'agit de l'enseignement au premier cycle de cours de criminologie et de sociologie du droit. Le salaire sera suivant le status et la compétence et l'entrée en fonction sera pour le 1 juillet 1979. On doit envoyer le curriculum vitae et trois lettres de recommandation à: Le professeur Abe Barnett, Directeur, Département de Sociologie et d'Anthropologie, Université Laurentienne, Sudbury (Ontario), P3E 2C6.

UNIVERSITÉ LAURENTIENNE. **Département de Sociologie et d'Anthropologie.** Le Département de Sociologie et d'Anthropologie cherche un professeur adjoint dont l'engagement sera d'un an en remplacement d'un congé d'étude. Les candidats devront avoir le doctorat ou être à rédiger la thèse. On accordera la préférence aux candidats bilingues. Il s'agit de l'enseignement au premier cycle de cours d'introduction à la Sociologie et méthode de recherche. Le salaire sera suivant le status et la compétence et l'entrée en fonction sera pour le 1er juillet 1979. On doit envoyer le curriculum vitae et trois lettres de recommandation à: Le Professeur Abe Barnett, Directeur, Département de Sociologie et d'Anthropologie, Université Laurentienne, Sudbury (Ontario), P3E 2C6.

UNIVERSITÉ LAURENTIENNE. **Département de Sociologie et d'Anthropologie.** Le Département de Sociologie et d'Anthropologie cherche un chargé de cours ou professeur adjoint. La nomination sera à titre d'essai avec possibilité de permanence. Les candidate devront avoir le doctorat ou être à rédiger la thèse. On accordera la préférence aux candidats bilingues. Il s'agit de l'enseignement au premier cycle de cours de théorie sociologique et d'histoire de la pensée sociologique. Le salaire sera suivant le statut et la compétence et l'entrée en fonction sera pour le 1er juillet 1979. On doit envoyer le curriculum vitae et trois lettres de recommandation à: Le professeur Abe Barnett, Directeur, Département de Sociologie et d'Anthropologie, Université Laurentienne, Sudbury (Ontario), P3E 2C6.

MCGILL UNIVERSITY. **Department of Sociology.** The Department of Sociology. The Department of Sociology is seeking an assistant professor for appointment September 1, 1979. Completed Ph.D. preferred. We are looking for a methodologist with superior competence in quantitative data analysis. Proven ability and commitment to teaching in this area will be an asset. Secondary fields open. Please write to Professor Maurice Pinard, Chairperson, Recruitment Committee, Department of Sociology, McGill University, 855 Sherbrooke St. W., Montreal, Quebec, H3A 2T7, enclosing curriculum vitae, copies of 2 or 3 papers and names and addresses of 3 referees.

SAINT MARY'S UNIVERSITY. **Department of Sociology.** Sabbatical Leave Replacement. Applications are invited for the sabbatical leave replacement of three courses taught either on a part-time, per course basis (a maximum of two per instructor), or, budget permitting, by one full-time, nine-month limited term appointment at the lecturer rank. On a part-time basis, the stipend will be at least $2600 per course. On a full-time basis, the salary will correspond to the scale set by Collective Agreement pro-rated for nine months. Courses include Introductory; Social Movements (Canadian Studies) and a course on Atlantic Canada. Appointment(s) as of September 1, 1979. Apply with vitae and references to: Dr. Henry Veltmeyer, Chairperson, Department of Sociology, Saint Mary's University, Halifax, Nova Scotia, H3H 3C3.

UNIVERSITY OF CALGARY. **Department of Sociology.** The University of Calgary, Department of Sociology, has a vacancy which it hopes to fill with a scholar experienced in a substantive area of sociology and in quantitative methods. The rank of appointment is open. Salary is commensurate with experience. Preference is given to Canadian citizens and landed immigrants, although all candidates will be considered. Send a curriculum vitae and names of at least three referees to: Dr. R. A. Stebbins, Head, Department of Sociology, The University of Calgary, Calgary, Alberta, Canada. T2N 1N4.

CARLETON UNIVERSITY. **Department of Sociology and Anthropology.** The Department of Sociology and Anthropology, Carleton University has two faculty vacancies at either Assistant Associate or Full Professor level. Candidates should have the following qualifications; (a) Ph.D. established record of research and publication, (b) all areas of specialization with particular interest in theory, (c) experience in graduate level supervision is desirable. Salary will be commensurate with rank and experience. Both appointments will be effective July 1, 1979. Interested candidates should forward curriculum vitae to: Dr. D. P. Forcese, Chairman, Department of Sociology and Anthropology, Carleton University, Ottawa, Ontario, K1S 5B6, before March 1, 1979. Subject to budget restrictions.

BRANDON UNIVERSITY. **Department of Sociology and Anthropology.** The Department of Sociology and Anthropology invites applications for a one year appointment (sabbatical leave replacement) in Archaeology, effective July 1, 1979. The appointment will be at the Lecturer or Assistant Professor level. Ph.D. (or Ph.D. near completion) required. Salary competitive according to qualifications and experience. Current floor for Assistant Professor is 17,600 (under review). Preference will be given to candidates able to teach courses in New World Archaeology and Introductory Anthropology. Send a full curriculum vitae, names of three referees, and a covering letter outlining interests to the Chairman, Department of Sociology and Anthropology, Brandon University, Brandon, Manitoba, R7A 6A9. Position will be filled when suitable applicant is found.

ST. MARY'S UNIVERSITY. **Department of Sociology.** Applications are invited for two under-graduate teaching positions on a one year limited term appointment at the rank of Assistant Professor (recent Ph.D.) or Lecturer (Ph.D. candidate). All teaching areas considered, but familiarity with issues of Canadian Society and experience in teaching Introductory Sociology preferred. Salary in accordance with position on Collective Agreement scale. Apply, with three references, to Dr. Henry Veltmeyer, Chairperson, Department of Sociology, St. Mary's University, Halifax, Nova Scotia, B3H 3C3.

SIMON FRASER UNIVERSITY. **Department of Sociology and Anthropology.** Applications are invited from well qualified sociologists to fill a regular faculty position at the Assistant Professor Level. Preference will be given to scholars with expertise in some major Canadian social issue and who also have a solid theoretical background. The position is subject to budgetary constraints. Salary is commensurate with qualifications. Preference will be given to candidates eligible for appointment at time of application. Candidates are invited to send a c.v. with the name of three references to the Chairman of the Appointments Committee, Department of Sociology and Anthropology, Simon Fraser University, Burnaby, B.C., V5A 1S6.

UNIVERSITY OF CALGARY. **The Department of Sociology.** The University of Calgary hopes to fill up to two possible vacancies commencing July 1, 1979, subject to budgetary allocations. Preference will be given to applicants with some combination of research and teaching experience in the areas of Family Sociology, Social Psychology, Deviance, Criminology, Population and Macro Sociology. Rank of appointment open. Applications with up-to-date curriculum vitae plus the names of three referees should be sent to Dr. R.A. Stebbins, Head, Department of Sociology, The University of Calgary, Calgary, Alberta, Canada, T2N 1N4.

MCMASTER UNIVERSITY. **Sociology Department.** Applications are invited for a half-time Lecturer / Assistant Professorship for 1979-80. Ph.D. desirable and necessary for Assistant Professorship status. Specializations open. Salary commensurate with qualifications and experience. Enquiries should be directed to Dr. Peta Sheriff, Chairperson, Sociology Department, McMaster University, Hamilton, Ontario, Canada, L8S 4M4.

MCMASTER UNIVERSITY. **Sociology Department.** Applications are invited for a two year contractually-limited appointment at the rank of Lecturer / Assistant Professor. Ph.D. necessary for Assistant Professorship status. Specializations open. Salary commensurate with qualifications and experience. Curriculum vitae and letters of reference should be sent to Dr. Peta Sheriff, Chairperson, Sociology Department, McMaster University, Hamilton, Ontario, Canada, L8S 4M4.

THEATRE

SIMON FRASER UNIVERSITY. **Centre for the Arts. Theatre.** Simon Fraser University expects to make a faculty appointment in Theatre, subject to con-

firmation. Primary duties of the position are to teach acting, particularly through a Method approach to scene work, and to direct student productions. Additional skills in practical theatre are desirable. Qualifications should include substantial professional experience and/or a strong academic background. We seek an individual with wide knowledge of theatre practice and theatre literature. Candidates should be prepared to assist in the development of an emerging theatre program and to accept full faculty responsibilities within a department of fine and performing arts. The appointment will probably be made at the rank of Assistant Professor: current salary base $18,600. Duties to begin September 1, 1979. Simon Fraser is particularly interested in receiving applications from Canadians or those with substantial Canadian experience. Letters of application should be sent to Professor Evan Alderson, Director, Centre for the Arts, Simon Fraser University, Burnaby, B.C. V5A 1S6.

TRANSLATORS INTERPRETERS

LAURENTIAN UNIVERSITY. **School of Translators and Interpreters.** A one year sessional appointment and two probationary appointments subject to budget approval. Lecturers or assistant professors. Degree in translation. Experience in teaching terminology and translation. To teach terminology (theory and practice) and translation. Salary commensurate with qualifications and experience. Send application and curriculum vitae, with the names of three references to: Professor A. F. M. Arbuckle, Director, School of Translators and Interpreters, Laurentian University, Sudbury, Ontario P3E 3C6. Deadline: March 16, 1979.

URBAN PLANNING

QUEEN'S UNIVERSITY. **School of Urban and Regional Planning.** Queen's University School of Urban and Regional Planning invites applications for a position at the Assistant Professor level. A PhD in planning or an associated field is preferred along with a background in quantitative analytical techniques. An ability to teach in the economic side of planning would also be of interest to the School. All teaching is at the graduate level in a small (40 students) two-year professional programme. Salary commensurate with qualifications. Please submit vitae by March 5, 1979 to Dr. Gerald Hodge, Director, School of Urban and Regional Planning, Queen's University, Kingston, Ontario, K7L 3N6.

VETERINARY MEDICINE

UNIVERSITY OF GUELPH. **Department of Clinical Studies. Ontario Veterinary College.** A position in Small Animal Medicine is available in the Department of Clinical Studies, Ontario Veterinary College, University of Guelph. Competence in general medicine of all species of small animals will be required of the successful applicant. The main duties of the applicant will be to teach Small Animal Medicine at the Undergraduate and Graduate level and to participate as a clinician in the Veterinary Teaching Hospital. The applicant must be eligible for licensure in the Province of Ontario. Advanced degree, teaching experience and Board Certification or eligibility for Board Certification would be desirable. Academic rank and salary will be commensurate with experience and qualifications. Positions are subject to final budgetary approval. Enquiries regarding the position can be made to: Dr. J. Archibald, Chairman, Department of Clinical Studies Ontario Veterinary College, University of Guelph, Guelph, Ontario, N1G 2W1.

UNIVERSITY OF SASKATCHEWAN. **Department of Veterinary Anatomy.** Veterinary Anatomist. The Department of Veterinary Anatomy at the Western College of Veterinary Medicine will have a term (non-tenurable) faculty position at the Assistant Professor level available July 1, 1979. Acceptable candidates should be qualified to independently teach veterinary anatomy at an elementary level and to assist in courses at a more advanced level. Possession of both a D.V.M. and Ph.D. or equivalent degrees is desirable, but applicants with either is acceptable. Interested persons should send their Curriculum Vitae and names of at least three referees to: Dr. W.K. Latshaw, Department of Veterinary Anatomy, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, S7N 0W0. TelephoneNo.: (306) 343-3196.

UNIVERSITY OF SASKATCHEWAN. **Department of Veterinary Pathology.** Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon seeks applications for the position of Director of Diagnostic Services. The Director is responsible for the supervision of the diagnostic pathology service of the Department of Veterinary pathology. The position is a non-academic appointment as a Professional Associate in Pathology. Duties will commence as of July 1, 1979, the position to be filled when a suitable candidate is found. Diagnostic services include almost 10,000 specimens annually; coordination of the ancillary services of diagnostic microbiology, toxicology and clinical pathology, as well as direct supervision of 2 other Professional Associates, technical and clerical staff. Salary: Negotiable, commensurate with experience. Qualifications: Applicants must have a D.V.M. degree or equivalent, be eligible and take licensure with the Saskatchewan Veterinary Medical Association. A.C.V.P. certification and/or an advanced degree preferable. Considerable experience in veterinary diagnostic pathology is essential. Reply: Send curriculum vitae plus names of 3 referees to: Dr. J.H.L. Mills, Department of Veterinary Pathology, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

VISUAL ARTS

UNIVERSITY OF CALGARY. **Department of Art.** The Department of Art is seeking an outstanding artist / teacher of painting and drawing at the associate level to replace a senior staff member who will take a year's leave of absence. This is an eight-month appointment, from September 1, 1979 to April 30, 1980. Applicants should address experience and materials to Victor R. Brosz (Head), Department of Art, The University of Calgary, Calgary, Alberta T2N 1N4 and include (1) curriculum (2) vital statistics (3) at least three letters of reference (4) portfolio of visual materials, preferably slides. The expected date of appointment, September 1, 1979, is subject to budgetary approval. Closing date for applications is March 15, 1979.

UNIVERSITY OF VICTORIA. **Department of Visual Arts.** Printmaker at junior rank to teach introductory and advanced printmaking and other studio areas. Qualifications are an M.F.A. degree or professional equivalent. This is a regular position, subject to funding, starting on July 1st, 1979. Applications, accompanied by curriculum vitae and the names of three referees should be sent to Prof. George Tiessen, Acting Chairman, Department of Visual Arts, University of Victoria, P.O. Box 1700, Victoria, B.C., V8W 2Y2.

UNIVERSITY OF VICTORIA. **Department of Visual Arts.** Photographer at junior rank to teach introductory and advanced photography; the ability to teach in other studio areas would be an asset. Qualifications are an M.F.A. degree or professional equivalent. This is a regular position, subject to funding, starting on July 1st, 1979. Applications, accompanied by curriculum vitae and the names of three referees should be sent to Prof. George Tiessen, Acting Chairman, Department of Visual Arts, University of Victoria, B.C., V8W 2Y2.

MISCELLANEOUS

PRESSES DES OEUVRES LITTÉRAIRES **(Paris,. France).** Maison d'édition connue invite Mmes. et MM. les professeurs à faire offre de manuscrits. Les ouvrages retenus par le comité de sélection pourront être publiés dans une nouvelle collection dirigée par une éminente personnalité de la communauté universitaire. Pour plus d'information, écrire à: M.J.L. Fellois, C.P. 4292, succursale postale E, 99, 4ième avenue, Ottawa, Ontario, K1S 5B3, qui transmettra.

LATE ADS

UNIVERSITY OF VICTORIA. **Department of French Language and Literature.** 1. The University of Victoria invites applications for a regular full-time teaching position in French Language and Literature. The appointment is to become effective July 1st, 1979. 2. Qualifications: Ph.D. in French-Canadian Literature, Publications, teaching experience and near-native fluency in French required. 3. Courses to be taught include: French-Canadian Literature at the under-graduate and graduate levels and Advanced French Language. 4. Salary commensurate with qualifications and experience. 5. Applications, together with curriculum vitae and names of three referees should be sent to: Dr. E. Limbrick, Chairman, Department of French Language and Literature, University of Victoria, Victoria, B.C., Canada, V8W 2Y2. Applications will be received until March 16th, 1979. 6. It is the policy of the University of Victoria to give preference to Canadian applicants, or those who are landed immigrants at the time of applications, or those who have extensive Canadian training or experience, except in those cases where other applicants have clearly superior qualifications. The University also reserves the right not to fill this vacancy.

BISHOP'S UNIVERSITY. **Division of Business Administration.** Bishop's University, Division of Business Administration is seeking qualified candidates to teach advanced undergraduate Finance. This is a tenure stream position. Rank and salary open according to qualifications. Ph.D., Ph.D. candidate, or MBA with experience will be considered. Both men and women are invited to apply. Applications invited until position is filled. Appointment effective July 1st, 1979. Apply to: Cheryl M. Hooper, Business Administration, Appointments Committee, Bishop's University, Lennoxville, Quebec, J1M 1Z7.

QUEEN'S UNIVERSITY. **Department of Pharmacology.** 1. Professional assistant. 2. Ph.D. in biochemistry or biochemical pharmacology and at least two years post-doctoral experience. 3. To contribute to the advancement of a research project on drug-induced porphyrin biosynthesis. 4. $13,735 in the third year following the Ph.D. with an increment of $825 for each additional year of research experience. 5. Dr. G. S. Marks, Professor and Head, Department of Pharmacology, Queen's University, Kingston, Ont. K7L 3N6. 6. April 15, 1979 or as soon as possible thereafter. 7. Applications will be accepted until the position is filled.

UNIVERSITY OF TORONTO. **Faculty of Medicine.** 1/2. Department of Psychiatry — Associate Professor / Professor; Clarke Institute of Psychiatry — Clinical Director. 3. M.D. — Certificate in Psychiatry. 4. Responsible to the Director and the Board of Trustees for all activities related to patient care at the Institute. This includes general psychiatric and special investigative in-patient wards, day care units and an active ambulatory service. This is a major academic clinical position in a large psychiatric institute. 5. Commensurate with qualifications and experience. 6. Dr. F.H. Lowy, Director of the Clarke Institute and Professor and Chairman of the Department of Psychiatry, 250 College Street, Toronto, Ontario, M5T 1R8. 7. As soon as possible, and no later than July 1, 1979. 8. February 28, 1979.

DALHOUSIE UNIVERSITY. **Department of History.** Applications are being received for a position as a sessional leave replacement in Modern European History preferably with specialization in the history of Germany. The appointment will be for the period September 1, 1979 to May 31, 1980. Salary commensurate with experience. Closing date for application: March 1, 1979. Please send application to Michael S. Cross, Chairman, Department of History, Dalhousie University, Halifax, Nova Scotia, B3H 3J5.

YORK UNIVERSITY. **Department of Music.** The York University Department of Music has one or more sessional appointments, one year only, open for the 1979/80 academic session, September 1979 through April 1980. Doctoral degree, at least near completion; ability to teach introductory courses in musicianship and music literature. Preferred additional interest in music of the Americas and jazz studies, or general ethnomusicology. Rank: Lecturer or Assistant Professor, salary negotiable. Applications should be sent to: Dr. Alan Lessem, Chairman, Music Department, York University, 4700 Keele Street, Downsview, Ontario, M3J 1P3.

UNIVERSITY OF WATERLOO. **Department of Management Sciences.** Applications are being accepted for a position of Assistant Professor in Applied Economics / Management Sciences. Qualifications include Ph.D. with competence in economics, especially as applied to engineering. Preference will be given to Candidates with capabilities in Operations research or organizational analysis. Experience in engineering or allied disciplines is desirable as the appointment is within the Engineering Faculty. Duties include teaching courses, supervision of graduate students, and continuing research activities. Salary floor at the Assistant Professor level is $17,500. Those interested should send applications to Dr. D. W. Conrath, Chairman, Department of Management Sciences, University of Waterloo, Waterloo, Ontario, N2L 3G1. Effective date for appointment is September 1, 1979. Closing date for receipt of applications is April 30, 1979. Subject to the availability of funds. First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

UNIVERSITY OF WATERLOO. **Department of Management Sciences.** Applications are being accepted for a position of Assistant Professor in Organizational Behavior / Management Sciences. Qualifications include Ph.D. with competence in organizational theory and organizational behavior. Experience in engineering or allied disciplines is desirable as the appointment is within the Engineering Faculty. Duties include teaching courses, supervision of graduate students, and continuing research activities. Salary floor at the Assistant Professor level is $17,500. Those interested should send applications to Dr. D. W. Conrath, Chairman, Department of Management Sciences, University of Waterloo, date for receipt of applications is April 30, 1979. Subject to the availability of funds. First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

McMASTER UNIVERSITY. **Department of History.** McMaster University has a position at the Assistant Professor level for a 3-year term to teach Medieval European history and Byzantium. Ph.D. degree is required. Salary dependent on qualifications. Assistant Professor floor level for 1978-79 is $17,000. Please send curriculum vitae and names of three referees to: Dr. J. P. Campbell, Chairman, Department of History, McMaster University, 1280 Main Street West, Hamilton, Ontario, L8S 4L9. Appointment effective July 1, 1979.

SIMON FRASER UNIVERSITY. **Department of Kinesiology.** 1. Assistant Professor. 2. Phd with research experience in any of: (a) industrial hygiene, (b) human factors, (c) ergonomics, (d) occupational health and safety. 3. Teaching and research in industrial hygiene, occupational health and safety. It is anticipated that the successful applicant will act as a focus for interdisciplinary teaching and course development in human factors engineering and / or occupational health and safety. 4. Salary commensurate with qualifications and experience. 5. Dr. E. W. Banister, Chairman, Department of Kinesiology, Simon Fraser University, Burnaby 2, B.C., V5A 1S6. 6. September 1, 1979 subject to the availability of funds. 7. When position filled.

DALHOUSIE UNIVERSITY. **Department of Political Science.** Two positions in the field of defence studies: Senior Research Fellow, experienced in maritime studies and strategic theory. Initially for two years, (1) to work on a team project concerning non-superpower navies, and (2) to give an evening seminar on strategic theory. Salary

at Assistant / Associate level, depending on qualifications and experience. Post Doctoral Fellow with knowledge of an "emerging" power and / or the maritime aspects of defence studies. Initially, for one year, to work on the team project. Salary in the $12,000-$14,000 range. Applications for both positions to Chairman, Department of Political Science, Dalhousie University, Halifax, Nova Scotia, B3H 4H6.

UNIVERSITY OF MANITOBA. **School of Art.** Printmaking Department — Lithographer with experience in intaglio is required for sabbatical leave replacement during the 1979-80 academic year; possibly continuing for a second year. Responsibilities will include teaching the beginning and advanced printmaking classes and possibly advanced drawing classes. Send curriculum vitae and slides of original works to: Alfred E. Hammer, Director, School of Art, University of Manitoba, Winnipeg, Manitoba, R3T 2N2. Deadline: April 15, 1979.

UNIVERSITY OF MANITOBA. **School of Art.** Part-time position available for relief print-maker for 1979-80 academic year. Responsibilities will be teaching introductory relief printmaking classes. Send curriculum vitae and slides of original works to: Alfred E. Hammer, Director, School of Art, University of Manitoba, Winnipeg, Manitoba, R3T 2N2. Deadline: April 15, 1979.

QUEEN'S UNIVERSITY. **Department of Microbiology and Immunology.** Applications are invited for a post-doctoral position to study the genetics and replication of insect baculoviruses. Candidates should have a background in virology and biochemistry. The position is supported by M.R.C. for up to two years and from receipt of a Ph.D. degree. Further information may be obtained from Dr. Peter Faulkner, Department of Microbiology and Immunology, Queen's University, Kingston, Ontario, K7M 3N6.

TRENT UNIVERSITY. **Department of Philosophy.** Subject to budgetary approval, two one-year sessional appointments. A successful applicant should be competent in at least three of: informal logic, introductory philosophy, formal logic, early modern and ethical theory. Ph.D. preprefered. Send curriculum vitae and three letters of reference to Dr. Jim MacAdam, Chairman, Department of Philosophy, Champlain College, Trent University, Peterborough, Ontario, K9J 7B8.

UNIVERSITY OF BRITISH COLUMBIA. **Department of Adult Education.** Position: Summer session appointment in Adult Education, July 3, 1979 to August 10, 1979. Qualifications: Candidate will be a senior professor with a doctoral degree and extensive teaching experience, research in human developments and educational gerontology. Duties: Teaching an advance seminar in Educational Gerontology in the following areas: Aging Populations in a variety of settings. Lifelong Learning, Social Roles and Development Concerns, Preparation for Retirement, and Education for Successful Aging. Salary $3,300 and return economy airfare or equivalent for instructor but not dependents. Send full curriculum vitae and names of 3 referees to: Dr. William S. Griffith, Chairman, Adult Education Department, University of British Columbia, 5760 Toronto Road, Vancouver, B.C. V6T 1L2. Closing Date: When position is filled. The University of British Columbia offers Equal Opportunity for Employment to qualified male and female applicants.

UNIVERSITY OF BRITISH COLUMBIA. **Department of Adult Education.** The Department of Adult Education requires an Assistant or Associate Professor to teach 3 weeks in a 6 week course on Program Planning and Evaluation. The position requires extensive experience in Program Planning in Continuing Professional Education in a university setting. Experience in writing grant proposals for Continuing Education in the Health Professions would be preferred. A doctorate in Adult Education or closely related field is required. The salary range is $1,450 to $1,650 plus some travel expenses, and the period of appointment is July 23, to August 10, 1979. The closing date for application is April 30, 1979, and applications should be addressed to the Chairman, Department of Adult Education, University of British Columbia, 5760 Toronto Road, Vancouver, B.C. V6T 1L2. The University of British Columbia offers Equal Opportunities for Employment to qualified male and female applicants.

UNIVERSITY OF BRITISH COLUMBIA. **Department of Modern Languages.** Position: Assistant / Associate Professor in the Modern Languages Department, Faculty of Education. Qualifications: The following qualities would be considered assets: doctoral degree, successful teaching experience at the elementary and secondary level, experience in professional and program development activities, command of French, German and one other language, familiarity with French Canadian culture, graduate work in Curriculum Development, Instructional Methodology, Socio- and Psycho-linguistics. Job description: Teaching courses in Curriculum and Instruction, supervising student teaching, research and program development. Salary: Dependent on qualifications and subject to budgetary restrictions. Applications: Send resume and names of three referees to Dr. Robert R. Roy, Modern Languages Education, Faculty of Education, University of British Columbia, Vancouver, B.C. V6T 1W5. Commencement of Duties: July 1st, 1979. Closing Date: Applications close when position is filled. The University of British Columbia offers Equal Opportunity for Employment to qualified male and female applicants.

QUEEN'S UNIVERSITY. **Department of Drama.** Applications invited for Lecturer or Assistant Professor. Person qualified in areas of Directing and Dramatic Literature. To teach one survey course in Drama, and one introductory course in directing. Salary commensurate with experience. Applications directed to J. A. Euringer, Director of Drama, Queen's University, Kingston, Ont. K7L 3N6. Appointment is for nine months only, beginning September 1, 1979. Applications open until March 15 or until filled.

QUEEN'S UNIVERSITY. **Department of Drama.** Applications invited for Lecturer or Assistant Professor. Person qualified in areas of Directing and Acting. To teach one introductory course in Drama, introductory directing, and one course in acting. Salary commensurate with experience. Applications directed to J. A. Euringer, Director of Drama, Queen's University, Kingston, Ont. K7L 3N6. Appointment is for nine months only, beginning September 1, 1979. Applications open until March 15 or until filled.

SIMON FRASER UNIVERSITY. **Department of Kinesiology.** 1. Assistant professor. 2. Ph.D. with research experience in applied physiology and biomechanics. Some experience in the methods and tactics of team sports will be advantageous. 3. Teaching and research in some of motor learning, physiology and biomechanics. It is anticipated that the successful applicant will take a major role in teaching the biomechanical basis for motor performance to potential teachers of physical education and develop a motor activities laboratory course. Applicants should balance a well developed scientific background with practical experience either as a teacher of physical education or as tutor to physical education students. 4. Salary commensurate with qualifications and experience. 5. Dr. E.W. Banister, Chairman, Department of Kinesiology, Simon Fraser University, Burnaby, B.C. V5A 1S6. 6. May 1 or September 1, 1979 subject to availability of funds. 7. When position filled.

UNIVERSITY OF VICTORIA. **Division of Communications and Social Foundations.** Position: Rank open. Position in Primary Reading and Language Arts. Qualifications: Doctoral degree and school experience at the primary level. Duties: To teach graduate and undergraduate courses, on and off campus, in primary reading and language arts, and to supervise student teachers. Salary: Dependent upon qualifications and experience. Apply to: Full curriculum vitae and names of three referees to Dr. R.D. Armstrong, Chairman, Division of Communications and Social Foundations, Faculty of Education, University of Victoria, P.O. Box 1700, Victoria, B.C. V8W 2Y2. Effective Date: July 1, 1979. Closing Date: March 15, 1979.

KINGS REGIONAL HEALTH AND REHABILITATION CENTRE. **Department of Psychology.** Clinical Psychologist — Mental Retardation Specialist. Ph.D. or Ed.D. preferred. Internship and experience in working with the mentally retarded required. Opportunity to work as part of a multidisciplinary team on our three units for the mentally retarded. Kings Regional Health and Rehabilitation Centre is a modern 220-bed facility offering services to acute and long-term psychiatric patients, and rehabilitation services to a wide variety of residents, including 65 mentally retarded residents. Services to be provided include training unit staff in utilizing a developmental behavioural approach to mental retardation, training staff in use of behaviour modification techniques, and designing behavioural programs for residents. Salary range at Ph.D. level $20,520-$24,480. Position available immediately. The Centre is located in a pleasant, semi-rural area close to Acadia University and about an hour from Halifax. Forward curriculum vitae and references to: Director, Department of Psychology, Kings Regional Health and Rehabilitation Centre, P.O. Box 128, Waterville, Nova Scotia, B0P 1V0.

UNIVERSITY OF MANITOBA. **Department of Architecture.** 1. Assistant Professor and Associate Professor. 2. Masters in Architecture or equivalent, with preference to those eligible to work in Canada at time of application. 3. Teaching in the pre-Masters and/or Masters degree program in the area of building technology, design methods or construction economics. Successful candidate will also be required to teach in a design studio. 4. To be arranged. 5. For further information please contact Professor R.A. Forrester, Head, Department of Architecture, University of Manitoba, Winnipeg, Manitoba, R3T 2N2. 6. August 1, 1979, or as soon as possible thereafter. 7. March 15, 1979.

UNIVERSITY OF TORONTO. **Faculty of Medicine.** 1. Department: Genetics. 2. Title: Head, Division of Clinical Genetics. 3. Qualifications Required: Degree in Medicine with specialty certification in Internal Medicine or Paediatrics. Broad training and experience in clinical genetics. 4. Nature of Duties: To plan, organize and direct programmes in syndromology, inborn errors or metabolism, genetic counselling and related areas of clinical genetics. 5. Salary: Commensurate with qualifications and experience. 6. Person to Whom Enquiries Should be Sent: Dr. L. Siminovitch, Genetist-in-Chief, The Hospital for Sick Children. 7. Effective Date of Appointment: To be negotiated. 8. Closing Date for Receipt of Applications: February 28th, 1979.

SIMON FRASER UNIVERSITY. **Faculty of Education.** Social Studies Education. Assistant Professor. Qualifications; Doctorate preferred with school experience. Teaching at graduate and undergraduate levels. Active interests in research and development. Supervision of graduate studies. Appointment: Salary will be commensurate with qualifications and experience. The appointment, subject to final budget authorization, would be effective September 1, 1979. Application: Letters of application, together with curriculum vitae and the names of three referees should be sent to Dr. George Ivany, Dean of Education, Simon Fraser University, Burnaby, B.C., V5A 1S6. Closing Date: Applications will be received until March 30, 1979.

CONCORDIA UNIVERSITY. **Faculty of Commerce and Administration.** Concordia's Faculty of Commerce and Administration offers a large selection of programmes appealing to the mature student, the working man or the CEGEP graduates, both full-time and part-time, day and evening classes. It offers several certificates designed especially to serve the personal needs of working people in the various areas of business and administration; two Bachelor Programmes, with majors and minors in seven (7) different areas, three (3) specific diplomas in specializations, a Master in Business Administration (MBA) coupled with major participation in the joint Ph.D. Programme. The Faculty of Commerce and Administration is searching for full-time and part-time professors to teach in one of its five (5) departments. Full-time Professors: — should hold a Ph.D. degree, although candidates with a Master degree and solid Managerial experience will be considered. Research and / or publication records are added assets. Part-time Professors: — should be experienced Executive Managers, specializing in a particular field with preference given to those individuals holding 2nd. cycle qualifications. Vacancies exist in the following areas: — Accountancy Department: Financial Accounting — Intermediate and Advanced; Management Accounting Intermediate and Advanced; Accounting Information Systems and Control; Auditing; Taxation. Finance Department: Business Conditions Analysis and Forecasting; Corporate Finance; International Finance; Introductory Financial Management; Investments; Managerial Economics; Real Estate Finance. Management Department: Organizational Behaviour; Entrepreneurship and Small Business; Personnel and Industrial Relations; Business Policy — Strategic Management; Management, Management Theory; Smalll Business Management; Entrepreneurship; Business Policy; Personnel and Labour Relations. Marketing Department: Advertising; Industrial Marketing; Marketing Policy; Product Management; Retailing; Sales Management. Please send a detailed resumé and all pertinent documentation to: — Pierre Simon, Dean, Faculty of Commerce and Administration, 1455 de Maisonneuve Blvd. W., Montreal, Quebec, H3G 1M8.

SIMON FRASER UNIVERSITY. **Department of Archaeology.** Applications are invited from senior scholars, Professor or Associate, with specialization in prehistoric archaeology or related aspects of physical anthropology for the chairmanship of the Department of Archaeology. Some graduate and undergraduate teaching, research, departmental and museum administration are required. Applicants with administrative experience and research specializations which complement those of existing faculty will be given preference. Preferred starting date, September, 1979. Send curriculum vitae and application to Dr. R. C. Brown, Dean, Faculty of Arts, Simon Fraser University, Burnaby, B.C., V5A 1S6.

UNIVERSITY OF BRITISH COLUMBIA. **Faculty of Education.** Summer Session. Applications are invited for teaching positions in the Summer Session, July 3 1979 to August 10 1979, in the following departments of the Faculty of Education: Educational Foundations (History of Education, Philosophy of Education, Educational Sociology, and a graduate course in Philosophy and Educational Policy): Reading Education. Equal consideration will be given to both male and female applicants. All positions are subject to budgetary restrictions. Direct inquiries and applications immediately to Chairperson, of the department concerned, University of British Columbia, 2075 Wesbrook Mall, Vancouver, B.C. V6T 1W5.

UNIVERSITY OF NEW BRUNSWICK. **School of Administration.** The University will begin a Masters of Public Administration (MPA) programme in September, 1980. We require a faculty member whose prime responsibility will be the organization and administration of the programme which will be in the School of Administration. Applicants should have substantial experience in responsible government positions preferably in the health or social services areas. This is a tenurable teaching position and applicants should possess a doctorate in administration. The appointment will be effective July 1, 1979; rank and salary open. Apply to — The Director, School of Administration, University of New Brunswick, Fredericton, New Brunswick, E3B 5A3.

MCGILL UNIVERSITY, MACDONALD COLLEGE. **Department of Animal Science.** MacDonald Campus of McGill University, Department of Animal Science, Animal Population Geneticist Position, Ph.D. Duties include teaching at the undergraduate and graduate levels, research in genetics of cattle and swine and supervision of graduate students. Research will primarily center around a population of a quarter of a million dairy cows with production, milk composition, feed inputs, reproduction and health data available. Assistant Professor salary minimum is $20,750.00. Applications including Curriculum Vitae, transcripts and names of three referees should be sent to: Dr. S.P. Touchburn, Chairman, Department of Animal Science, MacDonald College, Ste. Anne de Bellevue, Quebec, Canada, H9X 1C0.

ECONOMIC BENEFITS. BENEFICES ECONOMIQUES

Report on Certain Aspects of the Public Service Employee Pension Program prepared by Tomeson-Alexander Associates Ltd. Minister of Supply and Services Canada, 1978. 154 pages plus Appendices and Tables.

Public Service Employee Pension Program

by E.D. Maher

Dept. of Administration, U.N.B.

This study was commissioned by the Government in order to get an outside opinion on the costs of the program and the extent to which such costs are being funded on a current basis particularly in view of the relatively recent introduction of full CPI adjustment for all current and future pensions.

The program consists of two parts — a basic pension calculated at 2% per year of service of the average salary for the six best years for which the employee contributed 6% of salary (PSSA), and a full indexing to the CPI introduced in 1974 for which the employee now contributes 1% of salary (SBRA). Contributions and benefits are fully integrated with CPP/QPP. For valuation purposes the consultants took as their "best estimate" that the CPI will rise at 6%, wages and salaries at 8.5% and public service employment at 1.3% over the next 50 years. They also assumed that the interest rate on new long term federal bonds will be 8.25% over this period. The assumed relationship between the CPI increase, the wage and salary increase and the long term interest rate seems generally consistent with past experience. (The Report does include a paper by an actuary from another firm which purports to show that with rapid inflation real rates of return on debt are negative. However this submission seems to have been ignored which seems reasonable. It has two weaknesses. First over the period studied — 1924 to 1975 — the CPI rose by more than 5.0% only in 1941, 1947, 1948, 1951, 1973, 1974 and 1975 which provides rather limited data. Second, and more seriously, there is no necessary connection between the rate of interest on new long term debt and the increase in the CPI in the year the debt is issued. While the interest rate will be fixed for 20 years or so the future movements in the CPI are not. Up until now investors do not seem to have expected high rates of inflation to continue for long and prior to the 70's they were certainly correct. Presumably they do not knowingly buy bonds with the expectation of a negative real rate of return. Thus, if they concluded that the current rate of inflation would last for the next 20 years they would presumably require an interest rate on new debt reflecting this expectation.)

The Government currently funds the PSSA by matching employee contributions and by crediting the fund with interest on the assumption that surplus funds are invested each year in long term 20 year federal bonds with reinvestment taking place 20 years later. Thus the fund reflects the same slow adjustment to changing interest rates as private funds. There is no mention made of the possibility of crediting the fund with interest on all funds at the current long term rate each year. If this were done then in times of inflation more of the cost would appear as an interest payment and less as a further required contribution. In a recent study for the Ontario Economic Council Rae and Pesandro have shown that if the real returns on pension funds were unaffected by inflation — and there was no time lag due to funds being tied up in long term fixed interest debt — that there would be no cost to indexation (See CAUT Bulletin April 1978 page 15).

There is an actuarial evaluation of the fund every five years and any deficiencies resulting from general salary increases are then funded over the next five years. Although experience deficiencies are ignored the consultants consider the system provides essentially full funding for the PSSA. Employer costs have been 8% to 10% of payroll in the early 70's and are estimated to be about 8.5% on the consultants "best estimates" declining to about 5% by the end of the century. The decline is presumably, at least in part, a result of the increasing portion of the pension that will be paid by CPP/QPP.

They estimate the current service cost of indexing (SBRA) to the government to be 8.5% of payroll — i.e. comparable to the PSAA itself — but that funding the past service costs of indexing over the next 15 years — the requirement in Pension Benefit Acts applying to private employers — would require a further 18% of payroll. This, of course, assumes 6% per annum inflation over the next 50 years. Any estimates of inflation over such a period can hardly be any better than mere guesses. Currently index payments far exceed the 1% of payroll contributed by employer and employee and are paid annually from the consolidated Revenue Fund.

The argument for full funding of a pension plan is that it will ensure that pensions will ultimately be paid — a matter of great importance to the employee. Many people have considered that full funding is unnecessary in the case of government plans — and many provide little or no advance funding — because governments are assumed to be perpetual and to have adequate taxing powers. It was also generally assumed that real per capita incomes would grow and thus it would be easier to pay the pension when it came due than to fund it in advance. Now, with taxes taking a steadily increasing portion of GNP — and the appearance of taxpayer "revolts" — and with little certainty that real incomes will continue to grow as in the past-there has been increasing interest in full funding of government plans. However with governments running very large deficits one might wonder whether a "paper fund" created by further increases in the deficits would provide any real protection. Currently employee contributions to the two funds combined greatly exceed pension and other payments but eventually as the public service ages payments will begin to exceed contributions and then the government will have to come up with actual cash.

A further advantage of full funding is that costs are taken into account in budgets as soon as they can be recognized. This system probably works well when benefits are deliberately increased or even when they increase as a result of general salary increases since the extra costs can be estimated with a fairly high degree of certainty. However, as already mentioned, when increased costs result from indexing for inflation what is relevant is not current inflation but the estimate of inflation over the next several decades and this is a highly uncertain matter. Thus full advance funding for inflation may not be entirely logical but the Report does not discuss this problem. (Actuaries are never anxious to emphasize that their calculations, based on their estimates of future inflation, are no better than their inflation estimates which are, like everyone else's, highly unreliable). Suppose inflation were to continue at 6% over the next 15 years during which time the past service benefits were to be fully funded (on the assumption of a perpetual 6% inflation rate) and inflation then disappeared, the plan would be greatly overfunded. All of its funds would be invested in long term, high yield (now high real yield) government debt and the yield would decline only slowly over the next couple of decades. The calculation of interest on the total fund on the basis of current long term rates — as suggested earlier — might be an appropriate interim adjustment method but only if any extra interest earnings above the statutory 4% were not used to reduce the employer's current contributions; this is done for such "excess" earnings now.

With respect to the general question of indexing the consultants state (on page 143)

> This is a natural protection for employees and pensioners to ask for in times of high inflation; there is a need for protection but, as we have seen, indexing can lead to very significant increases in contributions.

The consultants also studied samples of private pension plans and found that for 1971-1975 post-retirement adjustments were provided in 80% of such plans although almost entirely on an ad hoc basis. The increases were estimated to have averaged about 55% of the CPI increase for all plans including those where no adjustment was made. Thus it is clearly not true that only public servants get CPI adjustments although such adjustments have generally been on a statutory basis. However, after receiving the Tomeson-Alexander Report the Federal Government decided that they would, in future, use an ad hoc adjustment based on the amount of money in the SBRA fund. As part of this change they would transfer interest earnings on the PSSA fund in excess of the statutory 4% to the SBRA fund. (The Consultants indicated that the maximum amount that should be transferred should be about 30% — the amount represented by earnings on that portion of the fund supporting current pension payments — although it appears that the government plans to transfer 100%).

The consultants also undertook a comparison of the Public Service plans with a sample of private plans and concluded that, measured by estimated cost to the employer, the Public Service Plan was worth about 9% more in salary than the average private plan. While the figure is probably about the right order of magnitude the consultants recognized that public and private plans are not strictly comparable. The public plan includes disability payments while many private employers have a separate — and generally better — disability plan which, if costs are split 50-50, would be worth about 0.4% of salary. Under the federal plan an unreduced pension is available at 60 (55 with 30 years service) and there are dependant and spouse benefits; however, these latter are at the cost of little if any estate benefits if the pensioner dies early without an eligible spouse or other eligible dependant.

In 1977 the federal government announced its compensation policy as one of

> ...average comparability of total compensation with a representative sample of private sector employers, in a manner which ensures that Federal Service compensation does not lead compensation in the private sector.

The consultants seem to have interpreted this as meaning average compensation for all employees in the private sector although by using only firms with more than 200 employees their sample is weighted somewhat in favour of larger firms. However if one assumes that the Public Service actually wishes to compete with the "better" employees then a somewhat different sample would be required. Taking only the top third of employees in their sample the differential is narrowed by about 1-1/2%.

The Report contains much useful general information including a summary of the history of the Public Service Pension plans as well as historical figures on interest rates for federal, provincial, municipal and corporate bonds, mortgage yields and yields on Canadian stocks from 1949 to 1975. For 1927 to 1976 there are figures on changes in the CPI and in the Wage and Salary Index along with the yield on federal bonds.